

Hill Building

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Apu stood at one end of the atrium, next to the tall glass windows that ran from the floor to its height. Her back was turned to the party that was going on in the atrium this Friday evening. She stared out the windows, past the reflections of the gathering, past its chatter and noise. It was dimly lit outside, yet she could make out shrubs and pebble patches, and the outlines of vast concrete pillars that supported the upper levels of Hill Building. All these she knew from memory. Beyond were dark dunes of grass cultivated on the steep terrain that marked their campus, and further still, suspended like a floating lantern, shone a tiny door lit by a strong lamp. It looked like a magic entrance carved into the hillside, but Apu knew that it was simply a lower-level exit in the Chemistry building, one that led to an isolated platform where smokers bonded.

From out there, Apu's attention returned inside the atrium through the windows, initially soaring close to the ceiling, and then descended to the buzz of activity in the room, as if riding down one of the elevators servicing the building.

"I don't know, I kinda like courses. I worked hard on them back in my undergrad, which I really enjoyed, even though it was a lot of work. So it's hard for me not to take courses seriously now."

"Yeah, but they don't matter for research. You just need to pass on required coursework. Isn't that why advisors say you shouldn't waste time getting good grades?"

The two kids talking paused, and Apu realized they were waiting for her opinion. "You can do well in both courses and research," she replied with

a broad smile. “But don’t look to me, I don’t know what other professors think. I’m more like you students than them. Although I have been to way too many of these industry-sponsored events.”

“Have they always been held in here? I’d like to hear how things have changed, like in general.”

“Mostly in here,” Apu thought. “Some things have been replaced over the years, thankfully, like the common couches. Other haven’t, like these plants,” she pointed at a large fern. “A myth is that they live off all the beer that is spilled on them. The truth is they’re not real, they’ve always been dead.”

“Looks like things are winding down,” one of the students said, yawning and rubbing his eyes behind his glasses. “I had a long week, I think I’ll get going.”

“Same, I’m going to push off. Have a good night everyone.”

As the two students left, the triangle they had formed with Apu opened at the apex, leaving her at the base. University law required at least one registered master of ceremonies at department parties till the last drop of alcohol was consumed. By informal agreement among the computer science faculty, the number of professors that had to be present at such events was two. Tonight was Apu’s turn. Now that the party was on its last legs, and Mark, the other professor, showed no signs of leaving, Apu sensed that it was safe for her to make a move as well. Mark was surrounded by a group of young students. The sleeves of his shirt smartly rolled up in broad folds, his graying head slightly bent, Mark listened intently to what they had to say. The lines on his face were firm, till he suddenly burst out in a joke with

arms raised, putting everyone at ease. Apu found herself smiling, just at the sight, even though she could hear nothing of their conversation. Mark was not like her, she thought, who preferred to hang back and stick to the few grad students she already knew from a seminar she had taught. She thought he would become director of computer science someday.

It was then that Apu noticed a guy who had been wandering over to this end of the atrium. He had a laidback, curious expression on his face, as if looking at nothing in particular, but since there was no one else around, he must have been coming up to her. Apu folded her arms nervously, and flashed him a brief, icy stare. It had the desired effect, arresting his approach and erasing the half-smile on his face. She turned to her right and slipped through a door hidden behind the fake ferns, having mapped out all exits over the many years she had lived in the building.

* * *

Ben wasn't sure he would be welcome at the atrium, not being from computer science. But with an ID check and a stamp on the wrist he received an "All set!". He had never actually been to one of these parties, and decided to look around till he ran into Kevin, who had called him there. Even in its final stages, the event bore the unmistakable signs of CS wealth: endless rivers of ranch and hummus, a bounty of roasted vegetables, and an eruption of pizza boxes, now empty. This was a reverse fair, where the visitors were the attraction. From their counters, companies vied for students' attention with offerings of candy, swag, and balloons freshly twisted into ridiculous headgear. Ben stayed clear of them. How poor his own

department of materials science seemed in comparison, how pathetic their recently renovated grad lounge in contrast to this airy hall dedicated to the human imagination.

Ben reached the last of the counters, feeling like a child whose searching hand extended into a jar of treats had reached the dredges. “I’m sorry, did you want a free shirt?” a girl behind a counter asked him, “we just ran out. My partner and I are taking our desk down for the night.”

Ben walked up to her, reading her name tag, Jane. “No, I’m um, I’m not from here. I’m from materials science.”

“Oh! Do you work with computers though? We’re always on the lookout for great software engineers. Besides, I’ve heard that everything at this university tends to computer science.”

“True,” Ben nodded. “The rest of us are lined up at their gates, hoping to benefit from their generosity. I think I saw someone back there with one of your extra large shirts. He was so excited, he had it pulled on right on top of his sweatshirt. I can’t do that, I’d look too goofy.”

She laughed, “They are pretty silly. Hey, I didn’t catch your name.”

“Ben. Sorry I don’t have a sticker with my name, while I can clearly see yours, Jane, so that’s not fair.”

“Thanks Ben, would you still like to sign up for our mailing list, so you can receive information about our internship and job opportunities and such?”

Ben thought for a moment. “Sure, why not,” he scribbled his email on a form at the desk. Jane offered him some thumb drives as freebies, which he refused, and moved on. Here at the end of the atrium Ben found a solitary

figure, a girl, probably Indian, who looked like she could be a grad student. She was lost in thought, with a distant smile, one that Ben unconsciously mirrored as he found himself walking towards her. As he got nearer, she blinked, became aware of him, and her calm face splintered and rearranged into something fierce and defensive. Ben halted, confused, and she shuffled away before he could react. Moments later, his phone buzzed, and he forgot about the episode. It was Kevin messaging Ben that he had left the atrium hours ago, and was now waiting for him at a dive.

* * *

“Sorry I missed you back there,” Kevin said as Ben found a seat next to him at the bar. “Some of my buds threw me a last minute send-off.”

“All good. When do you leave for good?”

“Later this week. Done with school, going to California. I’m out!”

“That’s where you were this summer?”

“Yeah I was interning with the same company I’m about to join. They made me a full-time offer, and I couldn’t say no to a chance to go back home. Hey, you hungry?” Kevin slid remainders of past orders towards Ben.

“I did eat a crazy amount of celery back at that event. But I’m pooped from playing ultimate this afternoon. I could use more food.”

“How’s the team doing?”

“With all you masters students going away, there’s no team left. It’s alright though, I’ve been through a few of these cycles. People graduate, and I have to form a new team with fresh recruits. I’m probably done

competing in the league anyway.” Ben’s second glass of beer was here, and he took a long drink before setting it down. He watched the froth pop and recede, like foam organisms scuttling back to sea. “So you’re not here for that long. Did you come back just to wrap up your lease and stuff?”

“Someone could have helped me with those,” Kevin smiled, “I’m wasted enough that I’ll tell you the real reason I’m here. Did I tell you about the girl I was dating? I did, okay. We lost touch over the summer, and I didn’t know where things were, so I came back to check. I don’t know what I was thinking.”

“What happened?”

“I suggested we meet. She came over, we got take out, there were tears. I called her an uber, she left me with fortune cookies, it was over. That was last night. Now that I think of it, there was no need for me to come back. But hey, I get to see my friends one last time.” It was Kevin’s turn to drink. “Tell me how you’ve been.”

“I,” Ben announced with a raised finger, “need to use the restroom.” He stood up, listing, and reflexively hooked the bar’s foot rail with his ankle. The act flooded his mind with images of clutching a handrail for dear life when he was a child thrown in the deep end of a swimming pool. As he regained balance, he caught the bartender swiftly glance his way to make sure there wasn’t going to be a scene. She just as quickly returned to scarring a lemon for zest.

The restroom was an afterthought at this joint, difficult to find, and doubling as a utility closet. Ben edged past occupied urinals to reach the sole narrow stall, where he locked himself, kicked down the seat, and sat

down with a grunt of relief. He had eaten too much. There was no lack of reading material while he waited, for all four walls of the stall were pages from an urban scrapbook, densely covered in scribbles and stickers. But making sense of them would need the discipline of an archivist, something Ben did not have at the moment. What did catch his focus was lettering high on a wall that spelled A-P-A-T-H-Y. Both in its angular font and positioning, it seemed like the handiwork of a spider that could graffiti. And right next to it, from a window barely cracked open, Ben spotted growing a tendril of ivy. As if proving that this place too received sunlight.

When he was done and washing his hands, Ben noted the yellowed space-age enamel fixings, further signs that the owners had no plans to upgrade the establishment. He tried to dry off best as he could, given that the stack of papery tissues that had been thoughtlessly placed on the sink were soaked through.

“Ready to call it a night?” Kevin asked. Ben saw that the pint glass on the counter was still quite full, so he grabbed it, braced the thick rim against his canines, and dived deep, setting up a standing wave in the liquid as he drank. “Good job,” Kevin said when Ben put down an empty glass, “finishing my beer.”

“What! No.”

“It’s alright,” Kevin laughed, “I wasn’t planning on getting through it. Now finish yours.”

They said their goodbyes on the sidewalk. Ben told Kevin he could come back anytime for a game of ultimate, while Kevin said he would hold a spot for Ben in California. Kevin couldn’t believe that Ben wanted to

walk home at this hour, but Ben said, “I think it will do me good. Later.”

The path home was only a mile long, but crested a notorious hill. Alone now, Ben found a wind of energy, and briskly began ascending what was, on record, the second steepest street in the city. He wondered who cared for such facts. Grim consolation in wintertime, perhaps, when you saw your parked car slip on the icy cobblestones. He thought of Kevin and others he had seen move on from university life, while he had wasted time, with nothing to show for his research. This week too had wilted, like so many in the past. Years of opportunity lost, carried away like loose topsoil. A worry that had begun as a worm earlier this evening had grown to consume him, holding his hand and dragging him down like an unhappy child. It was a fear he could not face, that he could not see the future of his PhD, that he would fail to make use of what time remained, that time was an enemy.

Ben reached the top of the hill, panting, and closed his eyes while he caught his breath. The earth below seemed to reel like the hands of an enormous clock. Tomorrow is another day, Ben said to calm himself, tomorrow, the loser’s eternal refrain. He laughed out loud, and thought he saw someone move on the dark deck of one of the houses on the hill. A homeowner checking for intruders, perhaps, or just paranoia in his peripheral vision. He began the descent, the easy part.

Ben rented the second floor of a family home along with a roommate. It was accessed by a carpeted flight of stairs that opened onto a side door. He clambered up on all fours, climbing the steps like a slinky in reverse, remembering games played with his sister Hannah as a child. Once in his room, Ben fell into the unconditional embrace of his unmade bed. The

sheets were cool and smelled of him, and he felt as if he was being comforted by his past self. He found that sleep was hard to come by though, and his pillow turned hot. Ben flipped around and began watching videos, a sequence that began with pop culture and led to videos of naked women. He tried jerking off, but gave up when his head hurt. It was like squeezing water from stone. He threw his phone aside and shut his eyes, but continued to see bright flashes, image fragments, and human forms. All that he had watched was being garbled and played back to him. It was his brain throwing up, taking revenge. Every neuron blared a personal youtube channel for an undefined amount of time, until tormented and exhausted, Ben finally slept.

* * *

The origins of computer science at the university were humble, beginning in the basement of the engineering school. As the fortunes of computer science rose, so did its ambition, until the school ran out of space for it. In an unprecedented move, CS broke with engineering and began operating autonomously, directing its own affairs, and more importantly, managing its own funds. As was happening across America, a new computer science building was announced, named after David Hill, an early graduate and longtime benefactor of the department. The plans included a bridge between the new Hill Building and the old engineering fort. It was symbolic of the relationship where computer science set the terms, choosing how much to donate, and when to collaborate. Engineering protested but was powerless, eventually settling for a share in the wide streams of money that flowed through computer science.

Hill Building's designs, depicting it as tall and modern, with levels skewed like a Rubik's cube, may have won architecture awards, but its construction was delayed in classic university fashion. Apu's own PhD years were spent in spare rooms that theoretical CS shared with Applied Math, although she suspected this had as much to do with her advisor John's academic affinities as with any lack of space. By the time she was hired back as faculty at computer science, Hill Building was completed, with the theory group occupying its crown. Apu sat in a favored office with an enviable view of the campus, a crown gem. What a pity then, she thought, that she was in there doing the devil's work of logistics that came with being a professor. At a knock on the door, she looked up from the large Apple monitors on her desk.

"Good morning professor. I'm a masters student, we had a meeting right now?"

"Yes I remember, please come in," Apu invited him in, even though she had no clue, as her thousand unread emails could testify. "Were you interested in exploring research?"

"I wanted to discuss jobs. My home department is electrical engineering, but I'm enrolled in the computer science minor. It's been difficult for me to get a job. I was hoping you could give me some advice."

"Oh," she stared with her mouth open, the interest draining from her. "Go on," she said sharply. What a reminder that she was, on paper, the faculty mentor for the CS minor program. At the start of the semester, when the department director offered her the role, saying it would look good on her resume, Apu flatly replied that she hated administration. She

relented when he explained that they needed someone to fill the role and assured her that workload would be minimal.

The student described his background as being in hardware and circuit design. He was trying to get into programming and would take a job in computer security, machine learning, anything. But companies weren't shortlisting him even though he had been trying for weeks, a common story that Apu tuned out of. She returned to dealing with her inbox hell, and had to interrupt his nervous, desperate speech. "On-campus job fairs are the best way, I'm afraid. I don't have contacts at these companies who I can recommend you to. Job search is hard. There are support groups you can join," Apu pursed her lips in sympathy, "I can't help you, I'm sorry." After a pause of silence, he got the message. As he thanked her and slunk away, Apu noticed a laptop charger sticking out of his backpack and dangling between his legs, like the tail of an imp.

"Save my morning from reviews and travel plans," Apu pleaded as Elena, her PhD student, walked into the office, closing the door behind her. "Thank you!" she said as Elena handed her a vial of blood mandarin-flavored San Pellegrino.

"I stopped at the cafe on my way," Elena said.

Apu had had other students, but they were co-advised, shared with her as part of the new faculty bootstrap process. Elena was her first true student, and after five grueling years, she was ready to graduate. She was preparing her final journal submission before her defense. Elena walked up to the whiteboard in the room and got straight to work, sketching out the proof of one of the main results in her paper. Apu folded her legs

snugly and watched with joy as Elena seesawed from top to bottom, left to right, sewing together lemmas, communicating in fully-formed equations, employing a style of reasoning that was Apu's own.

Apu thought back to how she had plucked Elena from a batch of first year PhDs, impressed by her strong performance in a probability course and a history of competing in olympiads. She had been harsh with Elena, dropping advanced terms and references, letting her explore paths that Apu knew were dead ends. Elena used to be intimidated at their weekly meetings, and frustrated by Apu's refusal to publish partial results. But like a fledgling left on a sheer rock face with no choice, Elena learned to fly. Apu thought that she was now amazing in all sorts of ways.

Apu's whiteboard was divided into boxes using markers, one for each student. New students started with a small square she drew for their work, a nursery for ideas. From this seed, Elena's box had expanded as she earned Apu's approval, growing like a crystal to fill half the board, occupying a full room in Apu's mind. It was in this whiteboard space that Elena tilded her c 's and primed her ϕ 's, completing the proof sketch. "Looks great!"

"That's it? No questions?" After years of locking horns, Elena was probably surprised at how easily Apu gave way. "Well, remember you were asking if we could generalize the theorem? Let me show you." Elena returned to writing on the board.

Apu perked up, excited to see where things would lead. What Elena referred to as a generalization, with understatement, would actually be a major result, one she had been chasing for years. Apu got to her feet, cheering Elena on. Until it became clear that what Elena was showing

instead was that their current approach was inadequate, and could neither prove nor disprove their elusive goal.

“From here on the counter-example is standard. Like in the textbook,” Elena moved towards Apu’s bookshelf.

“I see where you’re going. The Hungarian one, chapter six. Or seven, doesn’t matter.”

Elena pulled out the classic reference and flipped through it. “Only in your bookshelf, the books are all read, even the dense ones. You buried the books in your head.”

“You mean I buried my head in books?” Apu said, thinking that this wasn’t the first time Elena had misused an expression, English not being her native language.

“Oh right. But maybe, what I said was better. The mistake was correct.”

“Too bad, the generalized theorem would have been amazing.” Apu sat back down. “But I’m very happy with what you already have. It’s a great paper, really solid. Let’s write it up, it will be a requiem for the theorem we were chasing.”

“I already did, I emailed you a draft this morning.”

Apu hurriedly found Elena’s draft and pulled up the freshly generated pdf, scrolling through it for an overview. In all characteristics, typesetting, logical structure, and turns of phrase, it was written by her familiar. A zero body fat, no-nonsense theory paper. “Perfect,” Apu beamed at Elena, her firstborn, her academic flesh and blood.

* * *

Ben was walking through the Commons, the university's food and recreation hub, when he ran into Junior.

"How's it going! Were you at the gym?" Ben saw the neon green tag on Junior's wrist.

"Good morning Ben. Yeah I just finished a workout. Oops, I forgot to remove this." He dropped the small duffel bag he was carrying and ripped off the tag.

"I'm going to have lunch with Charles, you wanna join?" Ben asked. "He's somewhere around here. You might know where."

"I don't, I haven't seen him today. Which is funny when you think about it, we share the same office. But we have different times, you know what I mean? I started my day a bit late, and came straight to the gym. But Charles, he gets in early."

"That explains why he's crashed." They spotted him slumped on one of the squat black seats spread around a central area, feet resting on a low table. He got up when they walked up to him.

"So what are we thinking. Food trucks?" Junior suggested, "I like the greek food truck, I like their portion sizes."

"Like the falafel dinner."

"Exactly. Five dollars, boom, I'm set for dinner as well."

"Let's do the dining hall," Charles said. Ben laughed, knowing that would be his answer. The dining hall featured a freshly cooked spread every day and was more expensive, typically frequented by staff and visitors rather than students. "What? It's nice to treat yourself well every so often," Charles said, leading the way to the dining hall, to its serving counter, with

the din of a kitchen behind it. There were fresh plates still warm from washing and a daily printed menu on a plastic stand.

“Good afternoon Charles, what will it be today. You get two sides and an entree,” the server asked.

“That’s the formula. How about wild rice, the roasted carrots,” Charles walked down the line, “and the pot pie.”

“Fancy,” Junior raised his eyebrows at Ben.

“These last few pies are cold, just a second,” the server wheezed as he swapped out metal containers with some effort, and served Charles from a steaming new batch. “Here you go sir, enjoy. Next.”

Junior and Ben went to find a table while Charles checked out the salad bar.

“So I did a internship with the cermaics group at SNL in New Mexico this past summer,” Junior told Ben. “I have some family in that area, so that was a perk, I got to visit them. The work itself was okay, not super interesting. But nice place overall. How about you Ben.”

“Oh I wasn’t doing anything much, I was just around here. Hey, that’s Ali.” They headed over to a table with a lone occupant. “Mind if we join you? You two know each other right,” Ben said. Ali rose and shook hands with Junior.

“Please join. Junior, yes? Haven’t interacted much, but definitely met. You’re in the same year as Ben?” Ali smoothed his graying hair that reached his shoulders.

“I joined one year after,” Junior said as they set their trays down on the table.

“Junior interned this past summer at SNL in New Mexico,” Ben told Ali.

“Really! I spend a lot of time at CNL here, which is like a younger sister lab to SNL. My advisor has two roles, he is a professor in materials science, as well as a group lead at CNL.”

“Hoffman? I spoke to him, he actually helped me get the summer role.”

“Yes,” Ali bowed his head ceremoniously, “great, I didn’t realize you knew Hoffman. It’s the opposite of the small world phenomenon. We are in the same department but I don’t know you well.” He moved aside a helmet on the table to make space.

“Did you drive your motorcycle in today?” Ben asked Ali.

“I did. Driving was on hold for a while because I had some issues with my back. I like coming in to work from school every now and then, it’s a nice change.” Ali turned to Junior, “I worked at CNL for some years in Hoffman’s group, before joining PhD. The people there seem to have a hard time remembering that I’m now his grad student, not his employee. They’re still expecting me to fix their problems. How did you like interning at a large lab?”

“The work was alright. It was a very small piece of a larger project, so not very impactful. It wasn’t a publishable nugget.”

“I am not surprised,” Ali said with a sway of his head.

“But the people were good, it was nice to make contacts. I now know some higher-ups there. I’m thinking I could apply again, maybe a job after I graduate, we’ll see.”

“That’s valuable experience, even if it isn’t all positive,” Ben said. “You

got to see what's out there. I regret not doing internships in my early years. I thought I had to be here, stay focused on my research," Ben shrugged. "Those were all my notions, my advisor wouldn't have cared either way."

"Ben, remind me which lab you're in."

"There's none, or there used to be, but now it's a lab in website only. My advisor is all but checked out. He has one other PhD student, supposedly, a seventh-year wandering soul no one has heard from."

"Are you still working on the simulation project?" Ali asked, wiping his mouth with a napkin.

"Yes. No," Ben winced.

"What's it about?" Junior asked.

"Well," Ben sighed, "at the end of a career pursuing defense contracts, my advisor got interested in education. He wants to build a materials simulator that could be used as a virtual lab in a classroom. You'd be able to, like," Ben recalled his advisor's go-to phrases, "specify an alloy, or add a functional coating, and study the resultant properties. The thing is, there's nothing novel in the proposal. There's no research, just software engineering."

"What's the source of funding, NSF?" Ali asked, which Ben confirmed. "Then it's actually a blessing. Free money to do research, you don't want to get stuck with the deliverables that come with defense projects."

"So I've been told," Ben drummed the table surface. "I did some early work on the toy simulator for a few years, but I'm searching for a proper topic for a thesis. I feel like my real PhD begins now."

Charles finally found them, bearing multiple plates, including a moun-

tain of salad.

“What is that thing?”

“It’s the mother of all salads. A matrix of greens, doped with cranberries, packed with beans. I’ve spent months perfecting it.” Charles lovingly poked it with a fork.

“Charles is a regular here. He’s on a first-name basis with the employees.”

“Oh wait till you see the real fixtures who come here every day. Like Alex over there,” Charles pointed discreetly. Alex, a handyman at the material science department, ate alone, with his back straight and immaculate table manners. He wore glasses with thick lenses, and his combed-up hair was set with cream. “Did you know he’s a rockhound?”

“A what?”

“He likes rocks. He has a whole catalog of them. Minerals, gems, ores. Check out his nineties-era website if you want to kill an afternoon.”

“That makes him more of a materials scientist than me,” Ali was amused, “Some days I’m just a database admin. What does Alex really do?”

As if he sensed their talk, Alex abruptly swiveled to look at them, like a reptile, his eyes enlarged and unblinking behind his glasses. The table turned away and laughed, with Charles the only one who waved at Alex. “You guys are embarrassing.”

“He can be scary.”

“You just have to get to know him,” Charles said. “If you don’t believe me, stop by his desk at the department entrance. It’s filled with newspaper cuttings from *Peanuts* and *Calvin and Hobbes*. That’s gotta be a nice guy.”

Ali had finished lunch but got a coffee to keep them company. “What were we speaking about, simulation?”

“Charles, even you’ve been doing some simulation related work recently,” Junior said.

“Yeah, so that’s about applying these promising machine learning models that are coming out of computer science to try and speed up our materials simulations. We effectively learn, or predict, what the simulation output should be, rather than run some gnarly equations, which can take days.”

“Isn’t that just picking at low hanging fruit?” Ben interjected.

“Possibly. But someone has to try the idea out to see if it works. Isn’t that what research is about?” Charles countered.

“I don’t know. I had to think a lot about simulation, whether I wanted to or no. I think it’s simply function evaluation, stepping through the calculation of equations, nothing more.”

“I know people who would object,” Charles chuckled, “but go on.”

“It’s more important, or fundamental, to think about those functions themselves. For example, one of the equations that we routinely use in simulations, we don’t know whether it’s correct!”

“What does that mean?” Junior asked.

“To run a simulation of how a material will behave, we set up the equation, along with boundary conditions, and solve it approximately. But it hasn’t actually been mathematically proved that a solution exists.”

“But we do use these simulations all the time,” Junior said questioningly.

“Right. The current guess is that the theory is fine. But it’s just that,

a guess, and it might be that it doesn't work everywhere. If you can find just one such case, one simulation that you set up with the equation, and it explodes, you can prove it's wrong. Until then, you can do all the machine learning on top of it you want, but we haven't settled the basic question."

"Ben, such questions, while I admit they are important, are just not sexy," Ali said, with Charles agreeing at his side.

"Let's say I studied the problem and failed," Ben dug his heels. "I think even that would be interesting. But we don't value negative results, there's no such forum."

"You are ignoring real constraints," Ali continued. "The research community is constantly shifting, searching for an opening, for important problems that can be solved. There are only so many resources, only so much money. Take CNL, for example, sometimes projects can be so focused, it is like tunnel vision, like looking at the world through a coffee stirrer," Ali held up the short black straw next to his cup. "The things you bring up are not wrong. But even you will agree that they are not high-quality work. They are the prerequisites. After you have studied the underlying equations, once you have had your fill exploring negative results, then you will be ready to discover something true."

"Sorry if the conversation got intense. I was only interested in simulation because my work is primarily experimental, but I've been finding it hard to get support," Junior said.

"Not at all, Ben and I argue all the time," Charles looked at Ben, who had fallen silent, thinking about what Ali had said.

"My advisor just had a baby, so he's never around," Junior explained.

“I keep doing mundane tasks to keep myself occupied, like helping others, making sure instruments are calibrated, but there’s no real progress. My advisor is respectful, but distant, with no real opinion.” Junior said that he felt like their meetings were going in circles, which sounded to Ben like his own situation.

Ben let Charles and Ali respond to Junior. He felt like he had spoken too much earlier, coming off as a fool, while Charles seemed well-positioned, and Ali wise. All the advice they now gave Junior were phrases he could mouth just as well: write things down before advisor meetings, be more explicit in communication, but don’t cross a line, your advisor is not your friend. But his words would lack conviction.

“May be it would be better if my advisor were more harsh with me,” Junior finally said.

“That’s a terrible idea,” Ben piped up.

“Agreed,” Charles laughed nervously. A large number of official-looking people had entered the dining hall, looking for seats. Charles took the call to head out and make room for others. They walked to a stack of shelves to put away their trays, but there were only a couple of empty slots left. The group separated as Ben and Ali went in search of another shelving area.

“I didn’t mean to put your ideas down back there,” Ali told Ben.

“No, no you were right. I didn’t know you worked at CNL before grad school. What made you apply to the PhD?”

“Good question. Why did I give up a larger paycheck to return to school? I guess, to put it simply, for career advancement. At a government lab like CNL, you can only go so far without a PhD, no matter how talented

you are. But even with a mediocre PhD, you can get your foot in the door, and rise to the top of the organization. It's like a club. What's the matter, you look sad!"

"I didn't know that. It makes me not want to end up in a place like that."

"You don't have to, you can be a professor, your own boss!" Ali laughed. "You can use the simulator you developed for teaching. Think about those deep questions, like a philosopher."

"I'm trying to forget about my simulation work, remember. Plus, any delusion I had of becoming a professor has been shattered."

"Just like my illusion of PhD life. Sometimes I wonder if I'm a CNL engineer pretending to be a grad student, or the other way around. My thesis work is frozen. It might all be an elaborate trick by Hoffman to keep me on CNL's projects while paying me a university stipend." Ali's words worried Ben, and he wondered how Ali remained calm. It was as if Ali read the concern in Ben's expression and answered with a smile, "It will all be fine though. PhD is just another phase of life. You know, my girlfriend has been wanting to start a family. If her patience runs out before my thesis funding, I'll simply quit."

"Shoot, I forgot to bring my credit card." Ben realized once they were lined up to pay at the exit.

"I got this," Ali offered, "nothing like the conversation and company of friends. These at least I will have gained from the PhD."

"We should do this again." The four of them gathered outside the Commons, where they watched Alex stride back to the department, wearing

a military-style jacket with many lapels and what was possibly a trekkie pin. “We can call ourselves the Alex Fan Club.”

* * *

Only Ben and Charles remained. The two of them cut across the university yards on a path paved with pollen-colored brick. They were part of a multilaned student traffic, one that spilled into the surrounding green. The earth pulsed with the bass of open music speakers, the air smelled of mulch, and the sun sat in a painted sky.

“Such a great day,” Charles said, putting on beach sunglasses.

“Let’s keep walking? How about the long route back.”

“Sure, I just need a reason to be outside.”

They veered towards a large tree in whose shade a confident sophomore led a college tour for eager parents. “And on this side you’ll see one of our most recognizable landmarks, the computer science building, also known as Hill Building. We’ve been walking for a while, so let’s pause here as this is quite the scenic spot. Feel free to take pictures, but for your own safety, please stay away from the edge.” The area around the tree was marked with boulders, beyond which was a vertical drop of twenty feet. Charles and Ben skirted around the tour and seemed to fall off this edge. A surprised dad holding a camera leaned over to see what happened to them, then noticed the concealed aluminium frame stairs that they were clanging down.

The view opened up at the foot of the stairs. To their left was the engineering school, which was their destination, and to the right was Hill Building. High up was a bridge connecting them, straight as an arrow,

while ahead was a gravel path that snaked gently down the sloping earth. In front was a rare sight, an unimpeded view of the city that stretched for miles. It was as if depth had been flattened, and segments of different neighborhoods were pasted next to each other. Close to the horizon was the football field of a catholic high school. Above it seemed to drift the vapor given off by smokestacks, gleaming in the sunlight. Furthest of all were the crisp arches and needles of downtown. It reminded Ben of a social realist mural, vividly rendered on a bright, clear day.

“You’re pretty quiet, everything okay,” Charles asked as they crunched along the gravel path.

“Just thinking about our conversation earlier. I happened to dust off a classic paper that raised the concern of the non-existence of solutions. That’s where I got the idea from. I’m wondering if there is any point to it.”

“I think there is. Aren’t we supposed to become better thinkers over the course of the PhD? That’s what you’re doing, you’re building general intuition. If I ever want to discuss something, I can always come to you, because you’re not just reading the trendy results. That’s why I ask you to review my papers.”

“But nothing comes from it. I set out to be a scientist, not a historian of science.”

“You have a weak follow Ben, that’s your problem. Why don’t you push your interests further along. You read all these cool papers, share them with others! You’d run a great reading group. That’s the number one thing I’ve learned from Becca,” Charles said, referring to his advisor,

“pursuing something to the end. It was plain luck that she was at an early conference workshop on the intersection of machine learning and materials science. She didn’t have a CS background, but she took the idea and ran with it.”

“Sounds like she sees you as a collaborator.”

“How are things with your advisor.”

“He sees me as an inanimate object, a checklist. ‘Second year? Finish your masters talk. Third year? I’ll need to explain why you don’t have more papers.’ That’s how our meetings go.”

They reached the basement of the main engineering school building, outside which transformers and HVAC machinery hummed. There was no designated ground floor on something built on undulating terrain, where so many levels opened to the ground. Unlike the front-facing yards, nature here was unkempt, and the vegetation had grown vigorous and high in the heat, taking over picnic tables. Materials science had a presence in the basement in the form of a metallurgy lab, which was the fief of Big Red, a colossal man with a ruddy half-moon and beard.

“Most of you will graduate without laying hands on a single real material,” Ben remembered Big Red thundering when they visited the lab during new PhD orientation week, “I aim to fix that.” They went through basic safety training wearing hard hats and steel-toed shoes, and worked under Big Red to cast molten metal. Ben wondered what kept Big Red busy the rest of the year. Research in metallurgy had ceased, and the department had long since made forays into bio- and nano-materials. Although the metallurgy lab largely operated as a historic specimen, it would continue to

be zealously guarded as part of the inter-department jostling for space on campus. That was also the reason there were English and Wind Instrument grad offices on this low rung, rubbing elbows with facilities management: humanities was not winning the space war.

Ben asked Charles if he wanted to take the elevator or stairs. “Stairs, always.” They entered the stairwell that was the marrow of the building, and like pilgrims in silence, began the six-floor ascent. The first landing was the dusty dwelling of an industrial-strength trash bin. The next reeked of cleaning fluid. Ben peeped through the lozenged pane on a door, and saw rows of toady floor sweepers parked on a linoleum surface. Conditions and lighting improved as they climbed. The chipped ends of steps gave way to polka dot-extruded rubber grips. Doors that needed a heft to swing open were replaced by ergonomic handles. Signs of life appeared as well. On a landing with bottle caps pressed into the wall, they had to stand aside to let a flock of students pass. “This is not a pipe,” Charles laughed, pointing. A sticker with Magritte’s ‘Ceci n’est pas une pipe’ was pasted on exposed plumbing.

The stairwell was crowded by the time they got to the level of their offices. The dull burnished interiors had been upgraded to teal trimmings. Brutal concrete walls had shed their cracks and were covered with tv screens that showcased course projects and Nobel laureates. Before exiting the stairwell, Ben glanced out of a window to look at Hill Building across from them. It looked like a spaceship ready to take off. Even its interior walls must be alien and warm, he thought, glowing and breathing, alive with algorithms.

* * *

Ben was on the bridge connecting engineering and CS one wet Sunday morning. It had been drizzling, so he had gone for a swim instead of a run. He then decided to stop by his office to get some work done, and took the opportunity to walk through Hill Building. There were always kids coding away in there, even on weekends, but the rest of the university was deliciously deserted. Ben walked in the center of the wide bridge, all by himself. The powdery rain had stopped falling and was instead sprinkled around in a mist. It collected in his already damp hair, turning it a dark shade of brown. His loosely buttoned shirt billowed, and the sandals he wore clapped at his heels with each step. Ben went over to a side of the bridge to look over its edge, but the view was obscured, as if the clouds had descended. He continued walking, enjoying the quiet, the post-swim haze his body was in. He felt weightless, like the suspended mist, like the seeming bridge itself.

A person appeared in front of Ben, walking in the opposite direction. She wore rain boots and a canary yellow jacket with the hood pulled low over her face. When Ben met her eyes at the moment of crossing, she looked away. They passed but she lingered in his mind, oddly familiar. It was when Ben reached his end of the bridge that he remembered. She was the girl he had seen that evening in the atrium.

Apu had reached the same conclusion about Ben slightly earlier.

* * *

Late one evening, Apu sat looking at the whiteboard in her office, her hands on her head with fingers interlocked. She was waiting for Jess, her youngest and only student after Elena, to show up. The box drawn on the whiteboard for Jess' notes should have grown larger by now. Apu had her advisees write down the last date of discussion in their work area, and it had been weeks since Jess had updated the contents of her box. The marker ink in it had turned crusty and dry.

"Sorry Apu, I was at soccer practice," Jess arrived all flushed, "intramural season is upon us!"

"How was your summer break," Apu smiled back woodenly.

"Great! My family went on a cruise. I had been really wanting to see my sister because she just had a baby boy. He's really cute, I had such a great time."

"Very nice, that's very good."

"I hope you got an opportunity to take some time off as well. Oh Apu, there was something I wanted to talk to you about," Jess continued before Apu could get another word in, "I was talking to some PhDs who are applying for faculty this hiring cycle. I heard how important it is to get grant writing experience." Apu found herself getting annoyed and looked away at her screen. "Because the success rate is ridiculously low, like seven percent? So apparently you have to write a lot of grants. If you're ever writing something that needs an extra pair of eyes Apu, I'd be interesting in helping out."

"When it comes to grants, it's not about how many you write, it's about how you write." Apu let Jess absorb that. "Elena has grants covered, you

can concentrate on research.”

“Sure let’s see, I have a document prepared,” Jess unfolded a macbook on her lap, “let me send it over to you right now, do-too-doo, there.”

Apu angled the monitor on her table till Jess could also see it. “This one? With the paper.pdf attachment? That sounds a bit premature.” Apu downloaded the file, renaming it ‘draft’ as she did. “There. Let’s take a look, walk me through what you have.”

“We have the problem of N agents that need to reach a consensus. Last time we met, I proposed an algorithm for how they should exchange messages. But we need to know if it works. So I coded up the algorithm and ran a few simulations.” The document was filled with plots that showed multiple colored lines rising and escaping the axis boundaries. “There’s no convergence. I tried different numbers of agents, different arrangements, and things always blow up.” Apu stood up and went to the board, wiping a section clean while Jess spoke. “I was wondering if we should appeal to minimax theory for an explanation.”

“No,” Apu said with pursed lips, “that’s not the right track.” She squeaked the cap off a marker and held it out to Jess. “If you will step up to the board. Good, let’s do a mathematical analysis of convergence. No, not with N agents,” she interrupted as Jess started writing, “just two agents that are communicating to reach a decision, two are enough.” She watched as Jess wrote a few first-principle equations and painfully tried transforming them in well-known ways. “There’s no point showing me textbook steps. I know them all,” Apu stopped her. Jess was on thin ice.

Apu saw her office door being politely opened and raised her voice,

“Later. I’m in a meeting.” It was probably her assistant Carrie, and the door was shut again in deference. Jess was still thinking, her entire posture spelling out TODO.

“What have you been doing?” Apu blurted out, then checked herself and cushioned the question, “How have you tried to solve the problem?”

“I looked into graph theory. I also thought about using statistical tests.” Jess’ answers, uncertain as they were, convinced Apu of the gulf between them. Jess would not be dropping loaded terms lightly if she really knew Apu. “I then turned to simulation.”

“Do you know why I asked you to analyze two agents? Because it would have become clear that your proposal wouldn’t work. I wanted you to prove that yourself. I’m trying to help you strengthen the concepts that go into a theoretician’s toolbox.” Apu took up another marker and zig-zagged on the whiteboard. “I can tell you put in effort, but it was a random walk that didn’t go anywhere. A lot of distance, little displacement.”

Apu went back to her chair, leaving Jess at the board. “Are you interested in this problem at all? You can be honest.”

“I am. It’s just, for me, it helps if I have a larger picture of the problem, what its applications or impact will be. Also,” Jess wavered, “my granddad is really unwell. I might get called to go see him anyday. It’s been playing on my mind.”

“I’m sorry about your grandfather, do what you have to,” Apu commiserated. “But there will always be something. There is never enough time, and you can’t spend it networking with professors, leading outreach, or what have you. Research needs your hundred percent. Sixty or eighty

percent effort may not be enough, might be the same as none at all.”

The meeting was done, leaving them both unsettled. Jess meekly said thanks and left. Apu was trying to clear her thoughts when she received a text from Shailja. “Shit,” Apu forgot that she was having dinner with her friend. Shailja had pulled up in front of computer science to pick Apu up and didn’t think she could hold on to the spot for much longer. Apu gathered her things and ran to the lift, which took forever to arrive. The department joke was that the elevators had been optimized for minimum efficiency.

Because of its many transparent walls, the interior of Hill Building seemed like a three-dimensional glass maze to Apu at times. Like now, from where she stood, she had a clear view of an empty corridor a few levels below. There was a sudden puff of smoke, from which a wiry man emerged. He was old, with a silvery bald head, but energetic, walking briskly with sweeping arms. He had a wide smile and his lips dithered, as if he were spelling incantations to himself. He wore no robe, but he was still a kind of wizard, Apu knew, and the ashen streaks on his oversized blue shirt were not of dust but chalk.

It was Erikson, whose linear algebra class was the very first course Apu had taken in grad school. He attacked blackboards with thick cylinders of chalk: room-spanning boards, boards placed at right angles, reserve boards summoned on rails. Apu enjoyed the course even though she knew the material, and still considered Erikson’s wonderfully intuitive, inclusive style the gold standard in teaching. He also taught a much-loved undergraduate course on functional programming. Teaching, rather than research, seemed

to be his main passion these days, though Apu could tell that his mind was still at work. He had recently posted a long manuscript on topology to his website, out of the blue. Perhaps that was what was on Erikson's mind even now, and why he appeared so happy. He was surfing a mathematical wave.

* * *

"Let's go." Apu jumped into the passenger seat of Shailja's car.

"What, you can't drive up here anymore? Why is this so complicated," Shailja complained. They hit some traffic on the main road where a lane had been blocked off for construction. "What are they still building?"

"Construction never ends." They drove past a large site with scattered construction equipment. Bobcats, caterpillars, and cranes, all inactive at night, killing time like gaping crocodiles. "This is a new business school annex."

"So! What's new Apu?"

"One of my students," Apu sighed, "Jess, she's not doing well."

"She's not good?"

"She's not focused. On her CV she's a superstar. The kind of person who lists all the prestigious PhD scholarships they were offered but declined. In fact, she was the one who sought me out as an advisor."

"Probably saw the rising graph of your citation count."

"She came with guaranteed funding for three years, which seemed like a dream deal. But she wants to be spoonfed, and you can't lip sync your way through a PhD. How do you manage such people?"

“At my work it’s up or out, which is very different. I’m sure this is a smart kid. You might just have to engage with her more, give more direction?”

“I’ve been a lot more lax with her than Elena. I shouldn’t continue turning a blind eye.”

It was a short drive to Cedar Square, where many students and faculty lived, where Shailja and Apu once shared an apartment, and where Apu now owned a house.

“Where do I park? Oh god, this is all resident parking only,” Shailja groaned.

“Not for suburban richie-riches like you. No no, just take the left in front of the library,” Apu instructed Shailja, guiding them to the end of a leafy side street.

“This isn’t a good place to park, we’re blocking a driveway!”

“I know the emeritus prof who lives here. He won’t care.” Apu got out once the car came to a stop and started walking away.

“Hey come back,” Shailja called out. “I didn’t get to say hello properly.” She hugged Apu. “Gosh, you’re still so thin. You can tell me that I’ve put on weight. I see it in your face.”

“No. I wasn’t thinking that. You look beautiful. So fashionably dressed,” Apu touched her cheek. “It’s all thanks to my genes anyway, I don’t do shit. If my mom is any indication, one day my metabolism will falter, and I’ll be fattened by all your envy.”

They paused at the small Cedar Square branch of the public library, now closed, looking at an ornate lamp with a cast iron rose that was hung

over the pavement. “Sanjay is very interested in chandeliers right now. He wants to remodel our interior lights. Unbelievable right?”

“I only remember that filthy hovel those boys lived in during masters. Didn’t they dismantle the smoke alarm because their cooking experiments kept setting it off? Stupid.”

“The landlord himself did it, some Indian guy.” Shailja continued to admire the lamp. “I know this has always existed, but it’s funny that I only appreciate it now.” Its grainy rays of light did not travel far before diffusing into the crosshatched darkness. Like an engraved plate from an antique book, Apu thought.

It was a pleasant evening and Cedar Square twinkled soberly before them. “So good to be back,” Shailja fanned out. “Local bank building looks unchanged, check. Ooh the patisserie,” Shailja went over and leaned down to look at the desserts on display. “The burnt almond torte used to be such a treat. I should bring my kids here sometime.” The glass window fogged up under her breath. “But what will they know,” she straightened. “They’ve had access to such pastries all their lives.” Shailja and Apu had to cross a street to get to their restaurant, and jaywalked under the gaze of mannequins in a chic clothing store.

“Apu!” Shailja said seeing her diagonal cross in utter disregard for vehicles on the road.

“I have the right of way. Besides,” Apu spread her arms out. “I own this place.” And just to make a point, Apu exaggerated her path into a hyperbola.

“What happened to Thai Hut?” Shailja said outside the restaurant,

reading a sign which said Curry Kitchen.

“Management change,” Apu said. Shailja looked unsure but was somewhat reassured on seeing a known face, the smiling middle-aged Thai maitre’d who welcomed them to sit down.

“I’m having beer,” Shailja said emphatically. “Nothing for you? You’re not drinking?”

“It’s been a while since I stopped drinking. No special reason,” Apu shrugged.

“That fan on the wall wasn’t there, new eternal buddha statue, same white tablecloths,” Shailja scanned the restaurant while loosening her scarf.

“Look closer at the menu,” Apu told her. The cover was new, but it was the same inside. Apu pointed out an inner corner of a page which still carried the name and logo of Thai Hut. They laughed and decided to split a green and red curry, like old times.

“Guess what,” Shailja said holding her beer, “I got promoted.”

“You made partner?” Apu asked, and Shailja nodded rapidly, happily. “Seriously?” Apu’s eyes widened, “That’s awesome. Treat!” Shailja laughed. “We should be having wine instead.”

“I know, but only cheap beer seems fitting in Thai hut.”

“Point. How do you feel about it? Cheers,” Apu clinked her goblet of water to Shailja’s bottle.

“Excited, thankful, it’s been an exhausting journey,” Shailja breathed in. “But I’m also stressed, yet again. It’s not like it gets any easier from here. The kids are growing up and need more of my time. I don’t think I have that kind of energy anymore.”

“You’ve spoken about people in consultancy eventually finding other things to do. Is that the plan?”

“Ya, now that I’ve basically achieved what I set out to do, I could try something different. Maybe healthcare, or cloud. Or, there’s a lot of buzz about AI,” Shailja raised her eyebrows at Apu, who raised her eyebrows back. “I’m looking at you Apu.”

“Sorry, I don’t have a secret startup you can join. But I do know people who are doing things. My work is still all theoretical.”

Shailja asked Apu how things were with her. “Things are okay.”

“Good. In Apu’s tongue, okay means good. If she says things are good, that’s when I should be excited that something great has happened.”

“That’s what my mom says!”

“How is the tenure thing going? Can I ask about that?”

“You can. Tenure should be fine,” Apu chose her words carefully. “We have progress checkpoints over the years, and those have been alright in my case. There should be a decision sometime this year or the next.” Much sooner than that, Apu thought, but there were some cards she played close to her chest, even with Shailja. “But now that you ask, and I wouldn’t admit this to myself, I’m actually nervous.” Apu held up her fingers in the shape of something tiny, “A little nervous. Everyone on the committee could be your friend and colleague, but then they go off behind closed doors, and the decision that comes out can be a surprise. I know because I’ve done that. It’s a reminder that in academia, at the end of the day, you’re alone.”

“Such a different world. We have our office politics, to be sure, but there’s much more predictability when it comes to important career mile-

stones. Not like Thai Hut, where things change but stay the same.”

Shailja kept speaking of Cedar Square in past tense, and it ticked Apu off a bit. Thai Hut has changed, she wanted to say out loud, it’s Curry Kitchen now and the new chefs use Planters peanuts and fry the tofu to rubber. We don’t need to keep dining here in kitsch. This neighborhood is still alive, and there’s a new ramen place down the street that’s much better. A torte tastes sweeter when laced with nostalgia.

“How is your family doing? Your brother is still in Europe?” Shailja asked.

“My parents are fine.” Apu replied and decided to answer Shailja’s next question before it was asked, “They stopped asking me about marriage a while ago. Their grief has reached a stage of acceptance. My brother is in Amsterdam, making pointless amounts of money in investment banking. To my parents, if I am stubborn, he is inexplicable.” Apu leaned back in her chair, “They wanted their children to do well in studies, and we fulfilled their dreams beyond their imagination. Now they would instantly trade in our achievements for, let’s say, grandchildren.”

“How are your kids?” Apu asked in return, but found that she was drifting. Instead of listening to Shailja’s words, she looked at the gray streaks in her hair, the lines around her eyes. Apu’s mental image of herself held constant at thirty years, but she had of course been aging as well. She saw her reflection in the bathroom each morning, but her brain edited out the diffs. Looking at Shailja was like looking into a more honest mirror. The face was different but the features were truer. It reminded Apu of profs with outdated personal pictures on their websites, such that recognizing them

in person could be a challenge. Like Erikson, whose website showed him paddling a canoe from twenty years ago. “I saw Erikson today.”

“What?” Shailja glitched as Apu interrupted her flow. “Oh, cool! His class was the first time we met.”

“Really? I thought we met earlier,” Apu said searchingly, “but I guess not.”

“Lapses are more surprising the better your memory. I also remember,” Shailja placed her elbows on the table, “We met at the end of masters, all of us Indian friends, recounting our antics, simply gassing. We didn’t know where we’d end up, except those like you who were continuing with a PhD. I remember asking you what your happiest memory in the last two years was, and you said,” Shailja recollected, “‘Whether I will view these years with happiness or disappointment depends on how my PhD turns out’. I was slightly hurt. We had so many good times, we even lived together, and it was as if those memories were being held hostage to your destiny. I’m glad you were successful.” Shailja smiled, “Not that I’m still holding a grudge or anything, I’m just remembering things as I felt back then, you know.”

“Of course.” Apu recognized those old emotions as hers, the constant reminders to herself in those days, the promises she made to not fail. It sounded exactly like her, even though she didn’t remember saying those words to Shailja, or caring about how Shailja must have felt.

“How are you getting home?” Shailja asked after dinner.

“I’ll take a walk. It’s literally fifteen minutes.”

“Nonsense, I’ll drop you off. Just get in.” Apu curled up in the car,

feeling secure. It was a combination of never having learnt to drive, memories of being in their family car while her father drove, and being cared for by a friend. She liked the feeling, but it was over too soon.

“Our Indian gang is having a potluck in a few weekends. You should come,” Shailja said when they reached Apu’s house.

“I’ll think about it.”

“Which means no. You can just tell me, you know.” Apu knew Shailja wouldn’t press her. They hugged again over the gear stick and Apu got out. Shailja rolled down the passenger window to continue speaking with her. “But do come by some time, meet the kids. Your intelligence can rub off on them.” They laughed, and Shailja drove away.

Apu’s was the smallest house in a row of mansions that lay on the border between Cedar Square and Dalton Park. Dalton, which was more forest than park, was one of the reasons Apu loved living here, and she spent a minute outside looking at it. There was movement in there, perhaps a wind born in the forest’s heart, which set a wave of trees rustling as it took flight. The houses around her were starkly silent. Who lived in them? She hardly saw people around and didn’t know her neighbors.

Apu already missed Shailja. She felt bad for judging her harmless sugar-crusted nostalgia earlier, and wished she had been more present in the moment. But she also knew that she wouldn’t take up Shailja’s repeated offers of companionship. Apu had aggressively pruned her social circle and perfected a solitary life. She enjoyed the bittersweet aftertaste of the evening as she opened her front door, like dessert denied.

The ground floor of her home had a large living and dining room, along

with a kitchen. There was much in her house too that she was not friends with, she thought as she turned on the lights. Like the eight-seater table in the dining area which she never used. All the reading material that was on it though, that was a separate story. The theses, monographs, and conference proceedings that were scattered had been conquered to various degrees, and Apu picked up her current bedtime reading, a book on Markov chains from authors at UIUC. She also grabbed a couple of snickers from a bag of mini-chocolates sitting on her couch and headed up the stairs to the first floor.

She only had enough energy to read a bit, she thought, as she changed and got into bed. Apu read the statement of a lemma, then quickly hid the following proof with her hand, as if reading a thriller she didn't want to spoil. She managed to think of a proof, and rewarded herself with one chocolate. She popped a second one when she uncovered the page and saw that what she came up with was different from what the authors had. Apu turned off the lamp on her bedside table and wrapped herself tight in a bedsheet, alone in a house too big for one person.

She was startled by a loud crack from within the house. Just old wood settling, Apu told herself. But she often imagined that if a wolf from across the forest stole into her house and hid in one of the many rooms, she'd be none the wiser. She looked over to her bedside table, at a watch whose radium dial faintly glowed. It was a relic from her college days in India, when it was always strapped to her wrist, even when she slept. The window of the watch was heavily scratched, like lines on the palm of time, and Apu recognized their shape from years of use. Thus comforted by one of her few

friends, she finally slept.

2

On a warm evening as dusk was falling, Apu walked across Cedar Square to Ian's new apartment, to a housewarming. Ian, who Apu saw as her double, had been in the same PhD class, and had narrowly lost the computer science department's Best Thesis Award to her. As with Apu, CS had wasted no time in hiring him back as faculty.

Ian had taken long enough to get a place of his own, which Apu knew had to do with his on-and-off relationship with Kate, his partner of many years. Ian and Kate had a lively social circle, which Apu did not participate in. She was going this evening as much for Kate as Ian. She liked Kate, and thought Ian was a fool for not marrying her. Buying a house together was as close to a statement of commitment as they might get.

Apu stood at the building entrance, flanked by festooned stone urns, trying to figure out which one was Ian's apartment. She was guided up the stairs to the party by voices that leaked from open doors and windows.

"Apu, so glad you could make it!" A reed-thin Kate in harem pants and a silver tank top greeted her effusively. The interiors were bare, and Apu thought that a bird could fly straight through the rooms, unobstructed. "I'm so sorry, we're still setting things up." Kate led her to the kitchen where Ian was standing in a circle of friends. "Someone's been too busy with research to help out at home."

"True," Ian answered Kate. "Like I didn't find time to put away my wine collection, which is why it's all laid out here," he waved at a city of bottles on a side table. "It's all fair game. I want everything gone by the end of the night."

“Everyone, this is Apu, she works in the CS department with Ian, who clearly doesn’t think to introduce his friends,” Kate added Apu to the circle. “I hate to abandon you, but please make yourself at home,” she said to Apu as she left the kitchen laden with bowls of chips and guac for guests in another room.

“Kate’s so amazing. While you’re a slouch, I hope you know you got lucky,” Apu told Ian.

“I’d love to stay and continue being insulted, but I think someone’s at the door. I’ll be back.”

Don’t leave me yet, Apu pleaded silently, a stranger among Ian’s friends. They resumed their banter, which escaped her. “Anyone know what’s up with Mike?” a tall blonde girl asked, her gaze falling on Apu, who shook her head with a tight smile. “No? That’s too bad.” Their references were unknown to Apu, and the exchange of humor too rapid. She was rendered passive, or left laughing in their wake.

Ian ushered in someone new, who took a spot next to Apu, and they looked at each other.

“This is Ben, who is a grad student in, materials science? Yes, I remember. We met at the climbing wall and now we sometimes go climbing together. Oh wait, you already know my friends. I guess I am bad at introductions,” Ian said.

“Yeah, yeah,” Ben acknowledged the circle, running his thumbs along the drawstrings of the bag he wore, “I’ve met most of you.”

“I’m sorry, how did you say you knew Ian and Kate?” the blonde girl in the circle asked Apu.

“I’m computer science faculty, like Ian. I’ve known them since grad school.”

“Oh wow,” Apu heard Ben say.

The blonde shrugged as if the fact rolled off her shoulders and she continued, unimpressed, “So I was saying. If you examine nude classical sculptures, of heroes or gods, regardless of how perfect their physique is, they’ll only have a teeny-tiny penis. I’m not sure there’s a good example nearby. Maybe in the history museum.”

“Isn’t there a fountain,” Apu started, which Ben noted before someone interrupted her.

“Is this fieldwork part of your experimental philosophy research Franka?”

“The reason is that the ancient Greeks considered a small penis an ideal of male beauty and civilization,” Franka finished, and then said to the guy who made the joke, “You should have heard me out before taking your cheap shot,” she snapped, “A man like you might need the consolation.”

Ben waited for the laughter from the burn to die down, then turned to Apu and said out loud, “You were saying something.”

“Thanks. I’m not sure it’s useful, but there’s a fountain on one corner of the university. It’s pretty old, and never runs, but it has some impressive sculptures.”

“That’s a Poseidon, and it’s technically neoclassical,” Franka smiled patronizingly. “So similar, but not really the same.” Her wine glass was empty, which she refilled, and then began dancing lightly in place, swaying on her pumps. “Is there going to be dancing afterwards?” she asked, then said in a low voice conspiratorially, “Or is it not that kind of party.”

“I didn’t even notice there was music till now.”

“Just my phone hooked up to a bluetooth speaker,” Ian explained as he bounced around the apartment. As he passed, Apu saw Franka stop him, dig her fist into his shoulder, and lean in to say something in his ear. Whatever Ian said in response made her laugh throatily, and he steadied her and left them again. Franka swept a blade of hair from her face and turned back to the circle. She stopped laughing when she noticed Apu watching her. “No drinks for you two?”

“Might get myself a beer,” Ben went.

“I’m fine, I don’t really drink,” Apu said.

“Religious reasons?” Franka smirked into her wine glass. Ben made a face at her which made her go, “What?”

“No, that’s not it. I used to drink till recently. But then I had an experience, more than once, where I’d drink with friends, it wouldn’t even be that much. But after I went home, I’d have a really hard time calming down, or falling asleep. It was quite uncomfortable. It’s as if,” Apu thought for a moment, “As if I were a plane that wanted to land, but couldn’t because of bad weather. Instead, I’m circling above my destination, over the clouds, burning fuel, slowly losing energy. And the only way I can descend is through a conscious, agonizing spiral.” Apu looked at Ben, “So I thought, what’s the point if I’m not enjoying it.”

“That’s interesting,” Ben said. “You know, I’ve experienced exactly what you described. I never thought about it that way,” he said. “Or thought that a rational response might be to simply, not drink.”

“You engineers are no fun,” Franka said. “Why does everything have to

be so analytical? Where's the broader culture at your university?"

"Please, don't tell me you've missed the school of drama's dome in the middle of campus," Ben retorted.

"It has one of the top-ranked acting programs in the nation," Apu added, similarly defensive.

"There you people go again, obsessed with rankings."

"That reminds me, their annual season must have begun," Ben took out his phone and scrolled through search results. "They have a play in a few weeks. I'd recommend it to anyone looking for a fun event. Their productions are creative and super high-quality. Anyone else interested?" He offered the circle as part of his challenge to Franka.

"I'll go," Apu said.

"Thanks, but I'm going to pass." Franka said.

"Writing it off without giving them a chance? Now who's being closed-minded," Ben said smugly, and that was the last interaction Apu remembered having with Franka that evening.

Later, when it was time to go, Apu saw Ben clasp Ian's hand firmly at the door, as if exercising a climbing hold. "Take me with you the next time you go climbing," Ian said.

"Drag him out of his office if you have to," Kate permitted.

As if he had forgotten something, Ben came back in, returning to Apu. "Oh, about the play," he told her, "I can get the tickets. But I was wondering, if I needed to get in touch with you, about the dates, or anything else."

"You can find me online," Apu said with a smile.

“Right, of course, your public website. Thanks! It was nice to meet you,” he said, leaving with what Apu thought was a spring in his step.

* * *

The school of drama staged four plays in an academic year, one of which was expected to be an experimental production. These were hit or miss in Apu’s opinion. For example, she had once attended an adaptation of Golding’s *Lord of the Flies* to the stage and to present day. One of the actors held up a smartphone the whole time, its camera feed live-streamed onto a large screen. This was meant to be a statement on new media or split points of view, but Apu simply found it distracting, a gimmick that didn’t click.

The play they were going to watch today was a sixteenth-century drama from the Spanish Golden Age. From the setup of the venue though, Apu figured that this might be one of those instances where tradition was served with spin. Instead of their spacious playhouse on campus, the kids had chosen to present in a park nearby. They had constructed a raised wooden platform, square in shape and open to the sky. Audience seats were arranged around it on all four sides. Ben was already there, and Apu sat next to him.

“I hope we’ll be okay,” she said looking at gray clouds gathered overhead.

“How are you doing,” Ben said.

“I’m good, thanks,” Apu had never quite found a satisfactory answer to the question. She quietly flipped through a pamphlet with information about the play, until she realized that she had fallen into her default mode

of interacting with students, which was ignorance. She forced herself out of it. “No one else from Ian’s party came along. Do you know his other friends well?”

“I’d say they’re in the acquaintances, not friends category.”

“I had a hard time following their conversation. Like being dropped in the middle of a story without context.”

“That’s not on you. That group can be cliquish, and there’s so much history between them. For instance, Franka.”

“The blonde girl? Who is she?”

“She’s a philosophy postdoc.”

“I see, makes sense now.”

“Did she mention she’s from the Netherlands? Not just like, that’s where her family is from originally. She’s Dutch, she only moved to the US a few years ago.”

“Really!” Apu turned towards Ben, “I would never have guessed, from her mannerisms, or her accent.”

“She likes to surprise people with that information, like it’s a party trick. She can then talk about how it’s in her nature to blend in quickly, move through cultures, all of that. Frankly, I wasn’t expecting her to be there.”

“Why?”

“Because of her and Ian. Oh, you don’t know,” Ben stopped himself when he saw Apu’s eyes widen. “I shouldn’t talk about it.”

“You can tell me,” Apu wanted to know, “I’ve known Ian forever.”

“Well, I’m not sure of the details. But Franka has made her interest in Ian pretty clear. Then when he and Kate went on a break a while ago,

Franka made a move. Even though Ian and Kate hadn't clearly separated, and it was too soon, so it was awkward, right? Word quickly spread. But Franka's smart, she didn't continue pursuing things and it settled down. But that's what made her presence at the housewarming a little," Ben trailed off.

"Because Ian and Kate are back together now."

"It was a little odd. But I guess Franka not being there would've been just as odd, given they're not that large a group of friends."

"Wow, I feel like I know Ian so well from university," Apu sat back, "but I had no idea about this side of him. No one tells me these things."

"Sometimes you just need to ask," Ben looked at her. "Besides, is it worth knowing? Now I'm wondering why I know these things about Ian."

There was a ringing clap of hands and a heavy thud of steps as a robust and richly costumed figure stepped onto the raised stage and narrated the premise of the play to the audience. This was a tale of passion and tragedy, of love and jealousy. It would reach great heights, but it began in the countryside, where they were surrounded by hills. The narrator swept his hands and as the audience followed, the noises of the city seemed to be replaced by the landscape he conjured. This was the tale of Tomas, the narrator said, and a simply dressed young man stepped up. Tomas walked around the stage inspecting it, and bent down to run his fingers along the floorboards.

"Why does he touch everything carefully? Because he is a carpenter", the narrator explained, "and this is his humble home. Why is it so empty? Because he just finished building it." Tomas unwrapped a plain but pretty

sheet and draped it over a door frame on one side of the square stage. He found a vase with a single flower and placed it on a table. "Tomas will fight in wars, and travel far. His star will rise, but there is also darkness in his fate." The narrator paused, pensive, and the audience waited. "But that comes later. This mood is not fitting given the happy occasion," he regained his enthusiasm. "Why does Tomas decorate his home? Because it is his wedding night, and I wouldn't want to get in the way." The narrator hopped off one end of the stage, and from the opposite entered Isabel, Tomas' wife.

Tomas looked astounded by her. They circled each other, and then Tomas spoke, comparing her beauty to the dawn. He hoped he could always gaze upon her, and wished for his sight to gently ebb with the setting sun. The late evening timing of the scene suddenly became clear to Apu. Tomas raised his hands, comparing Isabel's loveliness to a flower. He hoped she would always bloom, and wished for a rain to renew her.

The actor froze, his arms outstretched, and Apu watched him almost break character with a surprised smile. Then she felt the drops of rain as well. Someone laughed but the actors held their place. The rain increased, and Apu spread the play's pamphlet over her head, looking over to see Ben enjoying the situation just as much. Just as quickly, the shower ceased, and those preparing to run for cover returned to their seats. There was a sparkle in Tomas' eyes, as if instead of interrupting, this magic sprinkling had strengthened his character.

After the play, Apu and Ben walked out together. "That was awesome," Apu said, "The drama school's bets don't always pay off, but this time they did. I'm so glad I watched that, thank you."

“Of course! I really liked it too.”

“Great setting, starting with their stage. I was wondering why it was so empty, but that was what allowed the actors enough movement so that all sides of the audience could see. Great use of the surrounding park.”

“The war cries off stage in the dark.”

“I’m not even going to talk about the rain, which couldn’t have been planned. I’ll say it again, they did a great job.”

“The costumes were good too.”

“Yeah! They put no effort in the set, it all went into costumes instead.”
Apu giggled, “That seems so whimsical, just what you’d expect from kids.”

“Were you a theater nerd?”

“A what?”

“Someone who really likes or is involved with theater, like in high school.”

“Maybe? In a previous life I was a carefree undergrad, and pretty involved in dramatics. A lot of long hours and exhausting nights, and a lot of fun. Nothing professional though, not like these kids, they’re on a different level.”

“Why didn’t you stick with it?”

“After undergrad? There’s no time in grad school! It’s funny, I remember these bookish types from my undergrad who curiously got more involved with extra-curriculars in their PhD. They’d learn music, organize festivals, take up glass blowing or improv. I wanted to tell them that they had it backwards. If you have free time during the PhD,” Apu laughed again, but with guttural derision this time, “something’s wrong with you.”

Oh shit,” she checked the time, “My bus will be here soon. How do I pay you for the tickets?”

“You don’t have to, it’s on me.” Ben could see that Apu wanted to pay, and watched her struggle deciding between arguing with him and giving up and getting to her bus stop. “Or we could go to their next play. I’ll send you an email. How does that sound?”

“Okay, okay, that sounds good. This was great thanks.” Apu took a few steps from Ben, then turned around. “No, because you’ll just buy them again. And what you send will likely be lost in my inbox. I’ll think of an event and get in touch with you, I think I have your email. Good night!”

Ben waved at Apu and watched her run to the stop. He guessed that she lived in Cedar Square, because that was where he lived too, and he needed to take the same bus home. But somehow, he felt like hanging around in the park by himself and waiting for the next one.

* * *

Ben was working one afternoon when he decided to take a water break, and went over to the kitchenette that was at one end of a hallway dedicated to materials science PhD offices. He almost bumped into someone at the water dispenser. It was Angela, who gave him a high-pitched “Hey” and quickly left him alone, her face veiled by her phone. Not that she needed it, Ben thought as he filled his bottle, given that she usually shielded her expressions with a low-slung sports hat.

As Ben walked back from the kitchenette, he glanced at Angela’s room, one of the many PhD offices with the door closed. There was no sound

within, and he would never be able to guess if she was in there. Angela was a person who wore half-fingered gloves and moved quietly.

When he returned to his office, Ben was notified of an email, which gave him pause. When he saw that it was from his advisor, it escalated to panic. He put away his phone and began pacing. It had been weeks since he had communicated with his advisor, and the last thing he was prepared for today was a rebuke asking him what the hell he was up to. When enough of his nervous energy had been discharged through his twitching legs, Ben sat down and picked up his phone, tapping at the email and racing through it once it had opened.

It was simply a paper review request, a forwarded message that had been auto-generated by a journal's website. His advisor apologized that it was last minute, but was hoping he could delegate to Ben. There was no mention of Ben's research, and Ben breathed a sigh of relief, reminding himself not to have worried. In not meeting to discuss updates, he had only been following his advisor's lead.

In the first few months of their relationship, Ben had considered it a duty to meet every week. But when Ben wasn't making progress, and struggled to explain where he was at, his advisor leaned back, confused, and declared, "We don't have to meet if you don't have anything to talk about." Ben set up a biweekly calendar event after that, which duly lapsed. He now dropped by his advisor's room on an ad hoc basis, often finding that the aged professor had not come in.

There was a second part to the email though, which had initially fallen off his attention. Ben scrolled further and read that his advisor had come

by some funding to study the surface properties of nanomaterials. Barbara, who was cc'd, was going to be working on it, and he politely requested Ben to share any simulation knowhow with her. Ben reacted with disbelief. Not only because he had assumed that his advisor had ceased initiating new projects, or that he had chosen a research scientist instead of a grad student, as Ben confirmed after looking up who Barbara was on the department listing. It was because this was exactly the kind of work Ben wanted to do.

He had even told his advisor so in the early days. In one of their meetings, Ben haltingly wondered about the point of building an educational simulator, and blabbed through his personal ideas of valuable research. His advisor had looked bemused, and then said, "Finish what is assigned to you, and then you can do whatever you want."

Ben's advisor was not the sort to punish him for not making progress with his PhD, although Ben noted with shame that he would be justified in doing so. Nor was he maliciously excluding Ben from opportunities. His advisor had simply not thought of him. Ben considered bringing up his interests again, but he could picture how such a discussion would go. His advisor would repeat the same maxim, delivered with an air of self-assured wisdom that Ben found stale. He would give him good old advice on how to succeed at a task that Ben ultimately did not want to do.

Ben still stared at his phone, his gaze unfocused. He closed his eyes to counter his disturbed state of mind, blanking out stimuli. He approached a dead calm, a standstill that passed for peace. Ben briefly tried to work, but found that his concentration was low. He wanted to speak to someone, and decided to go searching for Charles.

Ben went to the bathroom first, and almost bumped into Angela again, who was coming out of the women's. "Hello again," she laughed this time. "Drink water, use the bathroom, it's what I do all day, on repeat." This time her hat was off, and Ben saw that her hair was now dyed silver blonde, in contrast to the jet black he last remembered. Her hair color changed depending on who you asked.

Ben took his time walking over to Charles, collecting his thoughts, feeling timid like an unannounced house guest. But when he knocked and swung open the door to Charles' office, all Ben found in there was Junior, asleep at his desk, drooling over his keyboard. He jolted up when Ben entered, eyes alarmed and red.

"Oh, it's you Ben," Junior came to his senses. "Come in, have a seat." Junior massaged a crick in his neck.

Ben rolled over an exercise ball to sit on. "What's that?" he pointed at Junior's screen.

"Huh," Junior took off the headphones he had fallen asleep in, "just a game stream I watch while working." A multiplayer melee of medieval gore was unfolding. A phalanx of twirling characters landed on the scene, decimating the green game earth, filling it with smoke and the bodies of beasts. "Oh, oh, big move," Junior said, as a lightning bonus applied and points multiplied.

"Where's Charles?"

"It's his birthday today. I created a dinner thread, did I forget you?"

"Oh no, you didn't," Ben scrolled on his phone, "I just missed it."

"Busy day?"

“Not really. More like one of those fragmented ones where you can’t get work done.”

“I hear you. Well he just left. They’re assembling outside about now and are going to walk over. You should go.”

“Yeah, thanks, I think I will. How about you.”

“No,” Junior cocked his neck towards Ben, “I have too much work to do. Maybe I’ll join later. Tell Charles.”

Outside, Ben found that a group with Charles at its head had already left. Aaron, a fifth year PhD, was corralling the remaining grads. “People, we need to move,” he cupped his hands around his mouth. “Let’s go, we don’t want to be late,” he directed with large swings of his hands.

They started on the walk to the chosen restaurant. Ben joined in, and unfortunately found himself next to Aaron, who wasted no time. “How’s research Ben. You’re with Charles, so starting your fourth year? Now is when your research is supposed to take off.”

“Yeah, well mine’s still grounded. I need to get on the same page with my advisor for a thesis topic.”

“Ideally, a PhD doesn’t need an advisor.”

“I don’t know man,” Ben threw up his hands, “I’m just trying to get shit done.” He didn’t mind pretending to talk about how nice these dinners were to break up the monotony of research. But he didn’t have it in him to deal with Aaron’s angular, abrasive personality.

They reached a crosswalk with the walk sign in its last seconds. Ben sped up like he intended to make it. Aaron took the bait, sprinting across, while Ben stopped. Aaron turned around when he reached the other side,

searching for Ben, who merged with those who remained on this side, falling further back the better to hide his smirk.

At the restaurant, two large tables had been put together in a back room reserved for such large student groups. Ben continued to hang with the quiet crowd. A server went around asking for drinks, but Ben held on to a carafe of water and said he was good for now. He passively listened to ongoing conversation, and then drifted, mentally exhausted, looking around instead at the exposed brick walls of the interior, at the large incandescent bulbs that hung from the ceiling, at their glowing filament souls. In their orange glow, at the center of attention, Charles looked happy. He was seated nearby, but Ben hadn't said anything to him. Ben felt like Charles didn't need to hear his thoughts, and letting go of his troubles for the sake of this evening almost helped Ben let go of them for himself.

But then Aaron began describing a conference he had just come back from, bringing back news from other universities, and gossiping about which papers had caused a stir. Ben leaned into the conversation, "Where did you say the conference was?"

"In Hawaii, man, I said that at the start."

"From your descriptions, sounds like it could have been bumblefuck anywhere."

Aaron turned red as the table laughed. Ben had vaporized his boring discourse, and it didn't matter because their pizza had arrived. Patrick, a first-year PhD, picked up Ben's thread, "Yeah, didn't you go around and have fun? Tell us about Hawaii, I agree with uh," he searched for Ben's name.

“Ben.”

“Yeah, I know, I’m sorry. I think I’m getting drunk, I’m a lightweight.”

“No Patrick, you’re just bad with names,” Ben said.

There was more laughter, and for a second, Ben caught Angela’s gaze, who was also at the dinner, smiling at him. Ben knew there was nothing to it, but it somehow helped him relax and enjoy the rest of the dinner.

Later, after they were done and hanging around outside the restaurant, Ben got a moment alone with Charles. “I got an email from my advisor today. It made me really anxious.”

“Oh yeah?” Charles said, slightly frowning as he made the switch from having fun to listening to what Ben was drawing him into.

“Anyway, the details aren’t important. I’m glad I came out. I was able to get a hold of my feelings, put them aside, and have a good time.”

“You liked that you were able to do that.”

“I was able to overcome a mental block, even if I haven’t solved the underlying problem. It’s something I wouldn’t have been able to do a few years back. I would have allowed my advisor’s opinion, or the lack of it, to have affected me much more.”

“That’s great man,” Charles smiled. Before they could talk further, Charles was grabbed under each shoulder and hauled off, against his protests, to hop to another bar to get smashed. Ben didn’t quite get the full reaction he had wanted, but he felt like he had also overcome needing Charles’ sympathy.

In terms of getting actual work done, Ben knew that this was another day wasted, an opportunity released. The evening felt weightless, like it

had fluttered out of reach. But the sky was patterned in brilliant wispy clouds, and they lifted Ben's spirits by an inch. In the distance, he spotted Angela walking back to school by herself, like a speck of glitter on a sea of concrete. For some reason it reminded him of Apu, and he wondered if he would see her again.

* * *

Ben heard from Apu sooner than he had expected. The next play was a few months out, and Apu was afraid she would forget, so she found a mixed-reality exhibit that a colleague had worked on. It was showing in a small gallery downtown, and Ben made sure he was there before Apu. As soon as he saw her arrive though, it was clear that something was bothering her.

"I had an argument with my student," Apu hesitated while Ben held open a door to the gallery.

"We don't have to go in," Ben said. They were starting to prevent others from entering.

"Thanks. I'm not in the right frame of mind."

Ben suggested a walk, and they set off in an arbitrary direction. He didn't ask Apu for details. He stuck to making sure they didn't get run over while Apu walked with her arms crossed, lost in thought.

"I had my weekly meeting with Elena, one of my students," Apu said after they had been walking for a while. "It was me who suggested we discuss something else, since we're always talking about research. Elena must have thought it was out of character for me. It's because I've been so

excited that she's graduating soon, and I didn't sense that she was guarded today. But I'm getting ahead of myself."

"I wanted to broach next steps with Elena," Apu gradually opened up. "She has so much potential. I told her about a postdoctoral opportunity with someone I know at Rice. It's a small but excellent theory group, well-funded, and would be a great chance to expand her network. This position isn't even public yet, but I've been selling Elena to them, saying they wouldn't find a better candidate. I feel so silly."

Ben listened as they kept to the sidewalks of downtown, crossing eras in a matter of paces. They walked past the tall, fluted columns of a post office building, brushed a First Church clad in stone and vine, and glided over a marble plaza in front of the city's tallest hotel.

"Elena wants to go to industry. She wants to do practical things, but it's just," Apu wrung her wrists, "engineering. She was saying all these words. That machine learning has matured to the point where they are building complex systems, there's a need for research scientists, people who think carefully, understand statistics. But no matter how it's dressed up, that work is not research, not knowledge creation the way we know it. It will be monkey read, monkey apply," she was exasperated. "I said fine, if that's what you want. I could speak to my friends in industry. That's when Elena told me that she's been interviewing, and has already found a job."

They were cut off by a busy intersection. Ben retraced his steps to an alley between buildings, at the far end of which he could see a bright sliver of river. "Let's go this way." He led them through the realm of fire escapes and the rear-ends of restaurants. "Why does your student not want to stay

in academia?”

Apu sighed, “She says she’s not my equal. She doesn’t want to end up teaching in a small college in the middle of cornfields.”

“Is that true.”

It took Apu a minute to reply, as if considering how honest she wanted to be with Ben. “Yes. She’s excellent, but not brilliant. Academia is a competitive market, and a postdoc would raise her profile. But she kept saying she’s not good enough to be a professor. That she’s good at answering questions, not coming up with them.”

“Is that true? Sorry, I’m not trying to argue,” Ben said when Apu gave him a look. “I’m just trying to understand.”

“No it’s not. I did guide her a lot at the start, maybe too much. But these past few years, I’m the one who has been learning from her. I don’t know where she’s getting these ideas from.”

They joined a walkway along the river that ran through downtown. “The academic life, is that something she wanted?” Ben asked.

“I assumed so, she didn’t say otherwise.”

“Or was that something you assumed.” They spoke over each other.

“No, I understand what you’re getting at. No,” Apu said, worked up and with finality. Ben didn’t reply, and they walked on in silence. The glorious river was a welcome breath of fresh air after being gridlocked in the streets.

“I’m sorry. You were right,” Apu said, settling down. “Becoming faculty was what I wanted for her. I dreamt of us in the future, collaborating, exchanging students, meeting in conferences. Elena was what I worked for,

she was supposed to be my future cookie, the start of my mathematics genealogy. I'd taken her for granted, and didn't consider that as she was growing as a researcher, she was also growing as a person."

They walked down to a small park near the water's edge. "Sounds like she wants to be her own person. She did what you asked of her," Ben said, and Apu nodded. "Now she might want to start a next chapter, by herself."

"It's not going to be easy," Apu raised her eyebrows, "she's not prepared to work at a company."

"She'll learn, won't she?"

"She didn't even allow me to engage, let alone influence her. I don't know what's on her mind. Have I been too harsh on her?"

"I'm sure that's not true. I'm sure she is looking for your continued support. I guarantee you, a version of your dream will come true," Ben smiled, "she will come back to hang out with you. It will be alright."

"You're just saying that."

"Yes," Ben laughed, "But sometimes you say things will be alright even when you don't know, and that's what can make it so."

"I'm not sure I believe that," Apu said, then smiled as well. "But in this case you happen to be correct. If Elena is going to industry, even her wrong choices will make her a lot of money. She's a catch, so it's no surprise she's been scooped up. She is choosing a life that is better in just about every way."

They spent time sitting on the grass, looking at the river. "With Elena, I've been recreating the relationship I had with my own advisor. He was strict with me, and I was always afraid of disappointing him. After I grad-

uated, a switch flipped and he decided that I was his friend, which took me a while to get used to. He was pretty old school.”

“Mine too. I’m probably my advisor’s last student.”

“Oh really. That was a different generation, wasn’t it, with a fixed hierarchy. I was taught that the greats were faraway, and you were a speck. The PhD was your one chance to launch yourself into orbit, to reach for the stars. That thinking makes it harder for me accept Elena doing anything different. Industry is for masters, and she is worth so much more.”

“When you said that life in industry is better in most ways. What’s the catch?”

“Theory is hard, it takes practice. But theory is a handle.” Apu closed her fingers around an imaginary handle, rotated her fist, and pushed forward. “Once you grasp it, it can open doors.” Apu sat with her hands around her knees. “My meetings with Elena used to be anchors in a chaotic week. I even wrote a grant recently with a tight timeline, forgetting she’s not going to be around. I’m going to miss her.”

Ben lay down with hands behind his head, listening to Apu. He thought of her alluring image of theory, but then his mind went to her fearsome model of the intellectual universe, rigid like medieval cosmology. In the lunge for greatness, he was going to crash and burn, with Apu looking down from a higher rung. An advertising blimp moved slowly across the sky.

“Are you alright? You seem faraway,” Apu said.

“Yeah, I’m just hungry. I was looking at that blimp there, and it reminded me of your plane analogy, the one about drinking you made at Ian’s

party. I really liked it. It seemed like you just pulled it out of nowhere.”

“Oh that,” Apu laughed. “I had thought of it before. I just used it when that girl asked me.”

“I see. It’s like when my math teacher in high school gave the class a difficult problem, and I answered it immediately. From that day on, she thought I was special. The truth was that I got lucky. I had encountered the problem at home before, where it took me a long time to solve it.”

“I’ve often thought that my best ideas aren’t spontaneous,” Apu said. “Instead, I have to maintain a lookup table of creativity. We are often told to be creative, but you can’t when asked to. If our thinking is a function, then inverting that function is hard, and very few inputs lead to good outputs. So the solution is to try different inputs, and maintain a record of what works. When the situation arises, you can just look up a creative thought.”

“But then, to be effective, the table has to have a lot of entries,” Ben said. “You have to try a lot of thoughts.”

“That was the first lesson I learnt in grad school,” Apu replied. “Always keep thinking.”

* * *

The faculty roster of computer science was a constellation, and it was rare for all the stars to gather under one roof. The appointment of a dean provided one such occasion. Gordon, the new dean, was going to give a short talk, and refreshments would follow. While folks settled in, Apu set up a peanut gallery with Ian.

“Is this an open house, or a fireside chat?”

“Looking at the bigwigs in the front row, I hope this is a welcome and not an inquisition.”

“Even our director thinks this is a waste of time. He’s got his laptop open.”

“What’s the difference between director and dean?”

“You’ll know when they make you director.”

“I’ll use my power to appoint you dean, and take you down with me.”

Ian shushed Apu as Gordon rolled into view. He was a large person, and spoke with a voice that was booming, yet gentle and musical. “Good evening everyone, thanks for coming.” He tested control of the presentation slides that he had running, working a clicker like castanets.

“It’s good to be back. Years ago, Facebook asked me to run a new engineering team. I was uncertain, but I decided to give up my lab here and take the plunge. What I found was that all these large companies were facing new problems, like whales that found themselves in uncharted waters of an ocean. Problems which, incidentally, we had been thinking about for many years. How to make sense of large amounts of data. It was my job to build bridges, to create the right conditions that would allow useful connections to emerge. It worked, as you all know, beyond our wildest expectations. The guts of these companies are being rearranged, and our algorithms are running in their bloodstreams. The ones developed by our predecessors, by all of us.”

“But if I was uncertain then, I am more uncertain now. This is just the beginning of the impact of our technology. I am adamant that we are

right at the center of all this change. This is my main message, my one-line summary, if you will, of my job here. I want to help you do good work, and do so responsibly.” He was panting by the end. “I want to hear your thoughts.”

A professor was ready to oblige before the applause died. “Thank you Gordon. From my point of view, what has set us apart, what has allowed us to consistently punch above our weight, is our hiring. We’ve always recruited deliberately, with a view towards the future, and we invest in our hires, which has paid off. But now we need help.”

“Interesting, you mean help with the hiring process? So more streamlined, more hands on deck, that sort of thing.”

“No, although those would be good too. I meant resources.”

“Money!” someone from the back shouted, to chuckles and grumbles.

“In as many words,” the professor who started the conversation said. “It’s becoming harder to get a hold of good candidates. To make an attractive offer, we need more than our world-class reputation. Because we have competition from industries, not just other universities. We’ve become victims of the very success you speak of.”

Gordon grabbed a plastic bottle of water and twisted the cap hastily, which sent the ring seal flying off.

“We all could use some help,” the same voice from the back said. “Each of us has to raise every cent of our funding from the get-to. I’m a big fan of that policy, I give it a double thumbs-up. But compare that to universities with large endowments, and we begin to look a bit ehh.”

“Let me write that down,” Gordon found a paper napkin in his front

pocket on which he took notes. “Thank you. Swing away, what more can I do.”

“No Gordon, that’s the wrong question.” Dinah from the front row stood up. She was a reservoir of energy. Apu knew her to take meetings while she ran on a treadmill in her office. “Tell us how we can help you raise more money.” Gordon could only pace about in response.

“Speaking of strengths, we tend to overlook an important asset, our undergraduates,” a computer graphics veteran in a powder blue dress shirt spoke up. “They are remarkably talented and driven, sometimes crushing graduate standards. But they’re tremendously stressed. We need to make their lives easier, with more portals for guidance and counseling.”

“I agree,” Gordon nodded. “Our students are everywhere. Believe me when I say that companies are very aware of that debt they owe us.”

“We should make better use of undergraduates in research, make that process simpler.”

“Yes, yes.” Gordon was damp under his arms. A front lip of his shirt had come untucked, making him look like a judoka after a round of sparring. He absent-mindedly wiped his sweaty face with the napkin in his hand, and the room broke out in laughter. He had just smeared ink from his notes across his forehead. “Thanks for being frank with me. I wouldn’t have it any other way, regardless of what my appearance may suggest.”

“Alright that’s enough,” the director stepped up next to Gordon. “We’ve run out of time for questions. Let’s enjoy the rest of the evening.”

“A warrior’s welcome,” Ian told Apu as they sidled out of their seats. They parted ways to look for food, and Apu walked around for a while till

she came across Ryan and T.T. Sriram, who were part of the Algorithms sub-group within the CS department.

“Congrats Sriram,” Apu said. “Invited talk at the International Congress of Mathematicians coming up, pretty awesome.”

“I didn’t know that, congratulations,” Ryan added.

“It’s nothing. All major life battles have been lost, I’m just savoring the little things.” Sriram was dismissive, but with enough of a smile that told Apu he was downplaying the achievement.

“What’s new with you Apu, tenure decision soon?” Ryan asked.

“My fingers are crossed.”

“Apu doesn’t need to worry,” Sriram said grandly. “Applied math will gladly give her tenure.” So the game of flattery was on, but they were interrupted by a robot. A waist-high cylinder balanced on wheels, it tottered over to them like an inverted pendulum, bearing hors d’oeuvres on a tray. Sriram reached for a baklava, but some sensors misfired and the robot backed off and rolled away. “A good for nothing robot, it’s a nobot.”

“Ryan, did you know what Sriram’s initials stand for? T.T. is test tube,” Apu dug up an old joke that had the desired effect of embarrassing Sriram. “He was India’s first IVF baby, and they genetically engineered him to be a genius.”

“My parents were one of the earlier IVF cases in the country, it’s true, but the rest isn’t. But Apu,” Sriram pointed a finger at her, “had so much raw talent that she learnt calculus in sixth standard. They used to say that a dropped glass could shatter but not break her concentration.”

“Once, Sriram was talking too much in tuition, so the maths sir gave

him six difficult problems and said, solve any five. Sriram solved them all in fifteen minutes and said, check any five.”

“I don’t understand, how do you guys know so much about each other?”

Ryan looked more curious than humored.

“Her older brother studied with me in college,” Sriram said, taking off his glasses to wipe his eyes. Ryan must never have seen Sriram laugh so hard, Apu thought. Sriram was one of those people who looked exposed without their glasses. “Did you meet John?” He asked Apu.

“He’s here?” Apu wouldn’t be chatting with Sriram if she knew her advisor was around. She left them immediately and began ranging the room, looking for John, dodging waiters, declining openings for conversation, feeling watched. She finally found him sitting at a round table, chatting with higher-ups Apu that tended to steer clear of. John had withered, aged and bent over, but his eyes held the same spark, and he blinked playfully when he saw Apu.

“Tell them John, they have to get on board with the new program. I’ve seen their latest work, it’s cute. But you have to ask yourself, is your research contributing to the economy, or simply taking from it.” The table talk paused on Apu’s approach, and the expressions turned serene and glassy.

“It’ll work itself out,” John said, checking his watch, “I should get going.” He stuck his elbow out at Apu, who helped him stand up, and handed him his cane. “If you need anything, just ask Apu. She’s too smart.” He asked her to accompany him.

“You’re leaving already,” Apu said as they walked out of the hall.

“If only I’d known that becoming Emeritus came with suiting up and being put on show. My part here is done. I walk slow these days, so we’ll have enough time to catch up.” They reached a heavy double door which Apu rushed to open, but John wagged his cane at the push-to-open button, which she dutifully went over and pressed. “I need the extra space. How are you, is your student graduating?”

“Elena.”

“I was at her thesis proposal, and thought it was a defense. She’s done so much. I would write advance praise for her thesis.”

By unsaid agreement, they walked to the engineering school, to where the old computer science rooms were located before Hill Building. They stopped in a hallway, where John took the support of a newel post, next to stairs that led to the second floor, where he used to sit. The hallway was currently deserted, but alive with their memories.

“Remember what the Russian expats in Applied Math used to say? ‘You people are only re-discovering theorems we already invented.’”

Apu smiled. “How are you feeling these days?”

“On some days I feel young. I dream about papers, about a dinner date with my wife.” Apu did not ask which one. “But on most days,” John rapped a vending machine with his cane, “This guy is more productive than me. So many salted peanut lunches, back in the day. I was supposed to tell you something,” John closed his eyes, as if channeling spirits of his memory, “Oh yes, you got tenure. They’ll announce it officially soon, but I wanted to tell you.”

The sudden news left her feeling empty.

“I knew you wouldn’t be surprised,” John said.

“No, that’s not it.”

“Your thesis has generated so much employment, so many scavengers that fed off your work for years. Your PhD was enough to earn you tenure, you know that too.”

Instead of cheering her, John’s words vented a long-brewing anxiety. She had tired of her own thesis, but was afraid that her talents were flagging. “I’m worried John, I don’t know what comes next. It’s not like back then. I feel intellectually obese, better at writing grants than papers.”

“Don’t live in the past,” John said, hobbling away towards an exit.

Easy for you to say, Apu thought as she followed, the past was your present, and it was perfect. “Do you have any advice for me?”

“Relax, you’ll be alright. When have you not done well? When you have wanted something and not made it happen?” Apu looked for the advisor she knew, but all she found were ashes of his former scolding personality. She searched for something specific in his words, something to hold on to, but John was pliant, smiling, and already moving on from her question.

They exited out onto a street, and a car pulled up. “My daughter-in-law.” I know, Apu thought, I used to see her and your son at school all the time. John spoke to Apu as she helped him get in the car. “Life changes. You think you have it all figured out, and something new arises. You wanted advice, make use of what you have around you.” He turned to his daughter-in-law, “Apu’s like a daughter. Come home Apu, I don’t get out much these days. I’d like to see you more often.”

They waved goodbye and drove off, leaving Apu by herself. She imagined

flowing back in time, returning to her old PhD office, to a place of focus, where she could work out the meaning of what John had said.

* * *

Ben had a late start one day, only reaching his office after lunch. He dropped his empty takeout box in a bin, and collapsed into a chair. The momentum set it spinning. What was he going to do today? He stared at the ceiling, breathing deeply as in sleep, but no thoughts came. His mind felt immobile, like it was a cold-blooded animal. His brain needed a spark plug. At some level he preferred this state, the comfort of inertia, for just beneath it lay a low-grade static of anxiety.

The spinning chair came to a rest in front of his hibernating computer. Ben rattled the spacebar and the hard disk whirled in protest. He fiddled with the controls under his seat and kicked off another pirouette of the chair. What was he doing today? It was the right question, and Ben didn't want to run from it. The computer screen had awakened. It showed a terminal, a blank slate with no history of commands. There was a browser window, a zoo of open tabs, and an open pdf with Ben's last reading. It was a scan of an old paper claiming an alternate, self-consistent model of many-ion interaction. It was the classic paper he had argued with Charles about.

Ben kept up the chair turns, and an idea emerged from the churn. It was slow going, but Ben told himself that it was alright to proceed in small steps to dispel the stiffness. The paper had limited computational results. As far as Ben could tell, there was no modern software implementing its

formulation and comparing with established methods. In fact, such work would converge naturally with his funding theme of educational simulation. This could also be the opportunity he had been waiting for to write more code.

Ben got up, thinking, circling the room opposite to the chair's rotation. He needed to write down his thoughts. He clicked a mechanical pencil and put it to a notepad, splintering the lead with early excitement. He could talk about his ideas at a student reading group, as Charles had suggested. That would give him the practice to finally present a well-rounded initial set of results to his advisor. Ben sketched out a plan, already admiring it. From this vantage point, a salve of hope, he felt ready to begin.

"Wassup dude," Ravi, Ben's officemate, burst into the room and bowed low in front of Ben. He held out his laptop, flat like a tray, on which a cupcake was balanced, "for you." Ben picked up the treat. "What did you have for lunch?" Ravi looked at what Ben had discarded in the bin. "Refried beans?" he said, recognizing the octagonal clamshell from the Mexican food truck. "Right now my brain is refried."

"Why?"

"One minute, get my lunch." Ravi left their office and returned with a cup of instant ramen, with stumps of chopsticks sticking out of a swamp of noodles. He went ahead and sat on his desk, which was empty since most of his time was spent in a lab. "I was just in a meeting with my advisor," Ravi said. "I stole that cupcake from his son. I knew you would be working hard."

"I'm not, I distracted myself by looking at some plotting libraries."

“I am the distraction specialist, I have an entire catalog. Distraction number 231, Breaking Bad. What are you up to?”

“I’ve just been digging up ancient dynamics equations for multiple particles. I’m thinking of using them in simulation, say a thin sheet of metal.”

“Why bother? Use neural networks like everyone these days.”

“But physics-based models give you an analytical handle on the problem, which you can use to manipulate conditions and derive insight.”

Ravi shook his head sideways and straightened his back. He put aside his noodles, put on a pair of sunglasses from his pocket, and started slow clapping. “The man. Your brilliance will blind me.”

“Balls, you’re the brilliant one with the most papers. While I have a measly two.”

“You may have only few, but each of them has a distinct idea, with a creative take. That’s what’s important. See, I’m running a body shop of papers. Once upon a time I had the lofty ambition of achieving a high citation count. Now I know that no one reads my papers. To satisfy my cheap greed, I need to cheat. The plan is to publish a lot and cite myself.”

“Charles thinks you are the ideal PhD student.”

“I think Charles is ideal. The stuff he is working on, automated material synthesis, now that is the future. My project is a dead end. You think we have enough money to go through multiple levels of FDA trials? My advisor knows this too, he knows NIH funding is difficult to get, and will run out soon, so he’s milking what’s left.”

“But that’s what’s unique about your work, it has experiment and theory.”

“I’m just fooling people by playing with symbols. If you look closely, all my papers are the same. I re-package the same equations.”

“Then why do you do it?”

“Because it makes me feel important. My theory is of no use, but I’ve fooled myself into believing that it is. See, we have to predict how medicine pills coated in some new polymer will flow in the body. I conjure up intricate fluid mechanics terms, run some simple lab experiments, and declare success. But think of how complicated reality is, with so many factors. We have absolutely no data from actual trials.”

“What does your advisor think of all this?” Ben asked, and Ravi looked away. He usually had an answer to every question.

“He’s not happy,” Ravi was serious. “He wants my thesis to be a fundamental contribution.”

“Come on, what you’re doing isn’t enough?”

“Not to him. I’ve tried very hard dude, but I don’t understand what he means. Honestly, I think I am incapable. It doesn’t help that there are way too many things to do. Train undergrads, prepare project reports, review IRBs, build a new sensor, I don’t have time to think,” Ravi slapped his temples repeatedly.

“Yeah, I hardly see you here. I hope it settles down. Sometimes it’s just luck. Charles says so himself, he got lucky with his advisor.”

“Like Stephen, who allowed his student to graduate in three and a half years. Like how, did you see that thesis?” Ravi made mock retching noises. “It was so bad I had to throw up. How is it fair that others graduate so easily, but I’m trapped? Or that Angela who won best conference paper,

what's in it? My head did not explode with 'Woah what did I just read' ”.

“How do we judge good work then?” Ravi was lapsing into the poison of comparison, the ruin of academic stalking, and Ben tried to direct the conversation away from it.

“That's the exact question to ask,” Ravi said. “I think it's all pointless. When was the last time our research made an actual difference? So don't make a big deal of any of it. Don't give out awards, don't feature breakthroughs on some glossy internal newsletter. Don't announce a call for scholarships, because it only makes me feel like shit.”

Ravi stared at Ben, who had nothing to say. “Alright, so we've proved everyone is worthless,” Ben tried to conclude.

“And that I am the most worthless of all,” Ravi quipped.

“How?” Ben laughed, “You're so productive, you can generate papers from thin air.”

“Like a baba.”

“A what?”

“A paper baba.” Ravi kicked off his sandals and sat cross-legged on his table, hands on his knees. “I say a mantra to heaven,” he closed his eyes and hummed under his breath. “A paper appears!” he stretched his palm out to the sky to receive a gift from the gods.

“Is that like manifesting?”

“Light. A baba is like a hermit, but much more powerful. These days kids on tiktok are manifesting what, good vibes, happiness, a nice dress? Indian babas manifest immortality.”

“You should bless my software so it runs well.”

“Bro, even my blessings will turn into curses.”

“Okay, you win.” Ben looked defeated as Ravi laughed on. “Are you happy now?”

“Yes I am. Now let’s get ice cream. It’s grad student appreciation week.” Ben allowed himself to be dragged to the department grad lounge by Ravi. “What great work will you achieve anyway in the next half hour?”

They met up with Harika, Ravi’s girlfriend from Chemical Engineering. “I have been wasting Ben’s time, not allowing him to work,” Ravi danced around her gleefully.

“Why? You’re going to waste time now and then spend all night in the lab,” she complained.

The materials science administrative staff was manning the ice-cream counters, and Susie, their PhD program manager, beckoned them over. “Did you get your visa sorted out?” she asked Ravi as she handed them scoops.

“I did, and only thanks to you,” Ravi said. “Otherwise I’d have been extradited.” Susie didn’t like that joke.

“Susie deserves a Google Scholar page. She’d be highly cited,” Ravi said after they found some empty bar stools in the lounge.

“I agree, she works harder than all of us. Why are there no faculty in sight? They should be the ones serving us ice cream,” Ben said. “Besides, I’m not sure one ice cream makes me feel appreciated enough.”

“Advisors suck,” Ravi proclaimed, stealing ice cream from Harika’s cup. “Like Harika’s advisor suddenly decided to move to Europe, with no plan for his students. Why such assholeish behavior? Ben, when did your advisor

last think of you?”

“I don’t know. I’m still looking for a thesis topic to bind to. I hope this alternate simulation I’m trying out could be it, but I’m not sure if my advisor will consider it off-script.”

“Go for it, I’d do it if I were you.”

“Why don’t you stand up to your own advisor first?” Harika poked Ravi.

“Mad or what? He will murder me. With the tiny katana that is on display in his office, and then spit on my grave.”

“Don’t talk that way,” Harika scolded him.

“Hey Ben, Harika wanted to ask you something.” Ravi fumbled with her, then placed a hand on her head. “You only ask him no.”

“Fine, don’t make it weird. Ben, why don’t you have a girlfriend?”

“What?” Ben smiled.

“We were thinking that a nice guy like you should have a girlfriend.”

“I have been seeing someone,” Ben revealed, to his own surprise.

“Boss, what!” Ravi said with a drawl, “Why didn’t you tell me, you don’t consider me your friend or what. Who is she?”

“It’s nothing, we’ve just been meeting, with nothing on our minds. But maybe there is something there.”

Not for the first time that day, Ben found himself encouraged by Ravi. “Go for it,” Ravi said, his mouth frozen and full, Harika smiling by his side.

* * *

Dalton Park, which separated the neighborhoods of Cedar Square and Beaumont, was over a mile wide. Apu's home street lay along one end of the park, and beyond the other was the coffee shop that Apu and Ben entered. It was a welcome change for Apu, further away from school, a place where kids ran between tables playing tag. She looked around while Ben ordered, at the crayon orange walls, at the flyers for local bluegrass and jazz, and almost stepped on a gray mass of a big dog. A mastiff with its nose to the ground, it regarded Apu kindly, then returned to panting voicelessly.

Ben thought he recognized the barista behind the counter. After he had ordered, he stepped aside and looked at Apu as she studied a chalkboard, thinking of what to get. Her fingers, without ornament, rested on her lips, taut in concentration, above which fine strands of down caught sunlight. Ben looked away and they moved to a corner to wait for their orders. He played with idle brass tacks on a softboard, while Apu heard the squeak of someone luxuriously sweeping a highlighter across a test prep book.

"I can't sit and work at a coffee shop," Apu said. "For one, I'm not a coffee person." Her drink came out and Ben saw her empty four sachets of sugar in it without dropping a beat. "Coffee shops seem too nice. I wouldn't know what to do with myself in one, I'd feel too conscious. I'd end up staying at home."

"Sounds like something made up in your head," Ben laughed. "No one's going to be looking at you. Are you also not a donut person?" She had got a chocolate croissant at a joint known for their donuts.

"I've never liked them. There's something about fried dough, it dries up my throat and I feel like I'm being strangled from inside."

“I don’t know what kind of fried dough you’ve been having,” Ben shook his head in disbelief. “Donuts are one of those things I childishly cherish. My father would take us to get donuts every Sunday morning.” The croissant evidently had Apu’s approval though, as she rapidly ate it and picked at crumbs like a bird, fingers darting around. She then folded the brown paper bag it came in and funneled what remained into her beak.

They headed out, and Apu immediately said to Ben, “The girl behind the counter.”

“Was she in the play we saw?”

“Yes! She was a main character, Isabel I think. Good memory!”

“I think I get that from my mom.”

“That’s funny, my mother has an excellent memory for faces too. While my father is good with numbers. Remembering random vehicle license plates is his hobby. I guess I got a bit from both of them.”

“That’s interesting, it’s like there are different forms of memory, and each has its strengths.” They walked in the general direction towards Apu’s house, and stepped onto a bridge that crossed a depression in the geography of Dalton Park. “Memory was the villain during my school years,” Ben said. “We were discouraged from using it and were supposed to learn by play. I think educators have now realized that was extreme. Memory is another tool.”

“When I was growing up, memory was cast as both good and bad, at different times. Early on we had to by-heart a lot, which I did. Long lists of multiplication tables, shapes of the world’s great rivers, dates from ancient history. But as we got to high school, there was a growing sense that

memory was inferior to logic and the intuitive laws of physics. I had been a good student, but was going to lose my basis for doing well as subjects got more mathematical, the boys in my class gloated. So did my own brother. They were waiting for me to fail, and I believed them.”

“That doesn’t sound nice.”

“But I shouldn’t have believed them, because I just kept going,” Apu smiled. “Turned out I was good at math too. I should’ve listened to my grandfather, he taught my brother and me after school.”

“What would he teach you?”

“All the sciences, but mainly maths. He was a lecturer.”

“Cool, like a professor?”

“No, less than a professor. He worked at a local college, which was less than a community college. I guess his ways influenced me more than I think about.”

“I understand. A lot of my family has a PhD or a half. My dad,” Ben explained, “started one but left when he got an early software job. I’ve heard him say he should’ve stuck it out for a few more years and got one.” They leaned over the chipped stone blocks at the edge of the bridge, and looked at a forty foot drop into Dalton. “That’s a nice shirt,” Ben said, but was drowned out by a passing semi-trailer.

“That truck seemed way too heavy for the bridge,” Apu held on as oscillations dampened. “What did you say?”

“You have a nice shirt. Or whatever the right term for what you’re wearing is. The leaf motif resonates with the forest, and I like that the prints are all a bit different. It suggests handiwork, not a lifeless repetitive

pattern. But I agree about the bridge,” Ben quickly continued, motioning at rusty beams. “So many grad students who move here from either coast point out the crumbling infrastructure.”

“I like it here,” Apu looked out at the forest again. “I remember the first time I landed. It was also my first time in the US. I had a supershuttle booked to take me home from the airport. We drove up and down hills, and I was being tossed around in the rear, caught like a fly in a web of seatbelts. I didn’t know what I had gotten myself into, and then I saw Dalton Park. I don’t know if it was because I was jetlagged, but the trees all looked blue-green to me, not like the yellow-green of India,” she pointed at one of the leaf prints on her sleeve to illustrate the shade she had in mind. “I realized I’m in a different country. Even the driver, a quiet middle-aged guy with a ponytail and a cap said, ‘It’s a beautiful city’. I still think so, I don’t think we need an upgrade.”

“I agree, the city has many charms.”

Once they crossed the bridge, embankments separated them from the park on both sides of the road. Apu pointed at a gazebo above their shoulders, “What is that? I’ve seen people jogging next to it.”

“Some unused structure,” Ben said, unsure. “I do know that a trail skirts it and then drops into the park basin. I’ve run there. We could go, right now, it’s not that long.”

“Really? Okay, let’s do it.” Ben found the trail, and Apu felt like she finally got close to the gazebo that had forever seemed part of the background, at hand but part of a concealed boundary that she simply hadn’t pushed against.

She now saw the trail, well-hidden from the road, and how quickly it fell. The descent felt like a dizzy glide through treetops. “Even a stroll here feels like a race,” Apu said when they reached the bottom. They rested under a thicket of dappled shade, Apu sitting on a high-arched root, while Ben swiped a leaf off a low-hanging branch.

“We can connect up to another trail ahead that I think should bring us up close to your place.”

Apu nodded, still catching her breath, and after another minute was ready to move on. They walked the flat basin of the park. Apu looked above and behind them, and saw the underside of bridge they were on earlier.

“I should try jogging again, I’ve only done it a few times. I still have clean running shoes in a box somewhere, and a shirt set aside. An old shirt from one of the recruitment events at computer science,” Apu looked at Ben.

“Oh yeah, I know about those events. Good place to collect free stuff.”

They reached a field next to a dirt path and a car park, where a game of ultimate was underway. As they walked around the field, a player missed a throw, and the frisbee came gliding towards them. Ben launched himself from Apu’s side, taking giant steps, and intercepted the frisbee when it was inches from the ground. Apu watched as he snatched it from the air, spun around, and sliced it back at the game, all in one go. He trotted back towards her, pointing at the trail they were heading towards.

“No way,” Apu said, pausing with hands on her hips, seeing it was as steep as the path that led them down.

“What comes down must go up,” Ben said. “If it’s any consolation, that section is a challenge for seasoned runners as well. It’s nicknamed impossible.”

Apu was breathing heavily by the time they were back up. The return trail had brought them up to her street, as Ben had promised. Her clothes were pricked all over by stalks of dry grass.

“Would you like to come in for some water?” Apu asked when they reached her home.

“Thanks, but some other time. If you want to try running again, I’d be happy to help.”

“That would be great.” Apu crossed over into her front yard while Ben remained on the pavement. “Maybe in the new year once I’m back. Did I tell you I’m traveling for the next few months?”

“That’s cool, you didn’t. Is it for conferences?”

“Yeah, I don’t want to go. I’m over conference shop talk, but I’m an invited speaker. Anyway, you don’t have to hear about all that. More importantly, I’ll be in France as a visiting researcher. It should be a good opportunity to sit down with some collaborators and get work done.”

“That sounds sweet!”

“Thanks, and thanks for the walk today,” Apu said, thinking of their journey into the heart of the park and back.

“Hey Apu, I was thinking,” Ben brought her back from the reverie, “I really enjoy spending time with you, and I like you too. If, after you’re back, you want to do something more, like go on a date, I’d be down. If you want to just be friends, that’s of course great too. And if I’ve made

things awkward by asking you out,” Ben smiled, “this is an out and I’ll understand if I don’t hear from you again. Take care.”

Later, when Apu thought back to that moment, she would not be able to remember how she had felt, or when Ben had left. All she remembered was how natural and fluid the proposal felt in Ben’s hands, just like the disc he had caught and thrown.

* * *

School emptied out in December, leaving behind the lull that many grads craved. Ben had made up his mind to stick around this winter break. He had been chilling at home the past few days after setting up a long running simulation on his work computer, but planned to go in today. There was a department Christmas party that evening for those who remained. Ben decided to attend it, and then go check on his results after.

Ben’s hands ached from coding more than he ever had. He thought of friends who had been programming since they were little, whose fingers must have been molded into producing the basic beat of code for the rest of their lives. Programming needed a mindset that Ben was late to acquire. He had come to learn that answers to all his questions were out there, in accessible documentation, or in open forums. But it was up to him to not flit from lead to lead in irritation, to train his mind to be patient, and solve a problem in entirety.

As Ben slowly got the hang of it, putting together functions to build his framework, like laying bricks, coding began to acquire the hypnotism of the mundane. Ben was almost concerned that he was hiding behind the labor of

constructing software pipelines instead of facing the questions of how good they were, or their ultimate purpose. But even that was better than the standstill of inaction. Ben knew that he had a delayed start. But if this was all the rest of his PhD would be, the consistent exercise of discipline, it was enough for him.

At the department lounge, Ben loaded up on grocery-store oatmeal raisin cookies and cheese from a variety snack tray, and hung out with Charles and Yifei.

“I’m flying out tomorrow morning,” Charles said. “Ben, isn’t Ravi around? Why isn’t he here?”

“Slaving away in his lab, most likely.”

“He’s my hero. I can’t get any work done on Fridays. The day starts with a lab lunch, followed by a seminar talk, and then it’s time for pub trivia. Fridays are my Saturdays.”

“Sunday is my Monday, I already start working,” Yifei said, reminding Ben of how Yifei had disappeared soon after their PhD orientation, burying himself in research.

“What about you Ben? You probably spent hours reading papers today,” Charles said.

“Luxury,” Yifei smiled.

“I’ve been coding for a change. My fingers are sore.” Ben held his palms up and looked at them.

“Look at you! Targeting the January conference deadline? Yifei has multiple submissions lined up,” Charles said.

“Some are from missing a previous deadline. Some will get rejected,”

Yifei shrugged, “you know how it goes.”

“No, no way, I’m far out from a submission,” Ben said. “Isn’t it sad that you can’t write a paper on engineering, even though it takes so much effort? It’s not enough to code up a simulation model, I need an optimizer. Next I need to monitor, so I work on logging. But then I need visualization to make intuitive sense of data. All this doesn’t get talked about enough.”

“It’s fairly standard procedure Ben. I spent months setting up my libraries. Yifei has spent what, years?”

“Not to mention getting used to the bewildering arrays of MATLAB,” Ben continued. “What?” he asked, as Yifei began laughing uncontrollably.

“Sorry,” Yifei waved a palm in front of his face, “MATLAB is stupid. You want C++ for simulation. At least python.” Ben suddenly wished he had held his naive tongue. Yifei had prioritized access to the department’s timeshared cluster to run massively parallel quantum mechanical computations. Yifei sighed, “You know, I’ve been wondering, what’s the point of it all.”

“Easy for you to get philosophical,” Charles said, “since you’re defending.”

“You’re kidding me,” Ben was surprised. “Yifei, I had no clue that you were so close to graduating. It seems like just yesterday that we started together. Don’t you have to look for dates, find a committee?”

“He’s already assembled a thesis supercommittee, like a rock supergroup.”

“How do you know you’ve done enough?” Ben said, “Even the prospect of a thesis proposal is too daunting for me.”

“It’s not just how much you’ve done, but how you present it,” Yifei said. “You need to show proof of work in order to defend. Need to master the art of the exit. My wife has been saying it’s time for a change.”

“He makes me feel like I’m falling behind as well,” Charles told Ben. “Proof of work, or proof of time. I’ll be allowed to graduate after I do my term, like serving a prison sentence. But I’m not ready. I signed up to enter grad school, and now I’m institutionalized.”

“What’s the value and impact of my research?” Yifei mused, “What comes next? That’s what’s on my mind these days.”

“I don’t know,” Ben said, “I’m not sure I’d like living with those questions occupying my mind. They would take the joy out of research.”

“How do you decide what to work on then?” Yifei countered.

“Whatever I feel like, I think,” Ben pondered, “and I’m not being flip-pant. I want to arrive somewhere interesting, spend time living with it, exploring it, and once I am done, move on.”

“You are a,” Yifei searched for a term, “a hedonist. Where’s the challenge in your way of doing research?”

“I think every barrier to learning is a challenge, and there’s an infinite number of them. Like I’ve had many bugs in my code. But there’s also code in the bugs, there’s some insight to be gained from every error.”

“Ben’s not ready to change his ways yet,” Charles laughed.

“What kind of bugs?” Yifei asked.

“Uh, let me think of an example. I need to minimize energy to find the material’s stable structure, right. So I was using gradient descent,” Ben explained, and Yifei nodded rapidly in understanding. “I know there are

better optimization methods, but I wanted to start simple. But my code doesn't always find the minimum energy configuration. Sometimes there are unexpected oscillations, or a failure to converge. I am still trying to figure out why."

"Are you using a package?" Yifei asked, and Ben said no. "Oh so you wrote the gradient descent by hand? Interesting." Ben didn't like the disapproving look that had appeared on Yifei's face. "Are you checking the optimizer's progress at each step?" Yifei continued his line of questioning.

"Along the gradient? No, no I'm not," Ben remembered his thought process while coding, trying to satisfy Yifei. "But I am using some optimal parameters recommended on some course slides that I found."

"Courses make simplifying assumptions that don't apply to material simulation. You need to be checking if energy is actually minimized, and if not, backtrack," Yifei explained, and Ben realized with a sudden gnawing feeling that Yifei might be right. "Rookie mistake," Yifei diagnosed with a smile.

Afterwards, Ben helped Charles carry trash out of the lounge. "Don't worry about what Yifei said," Charles attempted to assure Ben before leaving, "if he really found you a bug, then that is progress."

With a sinking feeling, Ben returned to his office, alone, not bothering to turn the lights on. There it was, his software spinning away, the CPU performing operations no one cared about. It was now clear that his code had been faulty all along. It had been lying on its back, legs flailing without pause, and all he had to do was check on it once. His data pipelines had become sewers, dumping reams of shit. Ben looked at a terminal, at screen

after screen of verbose messages, obscure but undoubtedly errors, cold and spiteful chidings. The scrollbar became tinier the more he scrolled, like a Cartesian demon toying with him. He pulled up a visualization of his ion matrix. The material had twisted and rent.

Ben killed the simulation and tore down his work. The more he looked, the more holes he found, and so he stopped, his head in his hands. All semester long, he had been building a hut, while others like Yifei were fortifying ramparts. The worst thing was that a part of him suspected that his latest endeavor would also fail, and it now told him so. He looked at his computer, underutilized, smarter than him. The terminal cursor blinked patiently, hopefully, but the world's best tools at his service could not help. He had been holding on to relevance by a thin thread, and it had snapped.

My will is made of clay, Ben thought as he folded, rising, picking up his backpack that was burdened with bricks of guilt. There was nothing left for him to do but give up and go home.

3

On a snowy January day, less than a week after she had returned from international travel, Apu stood in her living room and watched a bundled figure let himself in from the cold. It was Ben, greeting her through watery eyes and a nose red from braving the head of winter.

“I chose a bad day, didn’t I,” Apu said as Ben bit a finger of a glove and yanked it off with his teeth.

“The snow is coming down fast, but not hard. The wind makes it look worse. It also makes it better.” He looked out of a window in the living room. “Every particle, at every point, showing the direction of the wind. The snow illuminates each gust and whim. I looked up once and caught a slow-moving vortex, before the snow took off like birds in formation.”

“Like living inside a vector field,” Apu said.

Ben smiled and stepped out of his damp boots. “Where can I hang my coat? It’s pretty toasty inside.”

“I like keeping it tropical. You can throw your jacket anywhere,” Apu motioned at a couch.

“It smells great in here.” Ben followed her and the ribbons of aroma into the kitchen.

“How was your new year?” Apu asked him. A pot on a stove was threatening to boil over, but Ben saw her deftly remove the lid and banish the froth back in.

“It was fine. The new year came too soon, so I’m re-using my resolutions from last time.” Apu chugged from a clear wine bottle as she listened to him. Ben thought it was a bit early to drink, before realizing it was water.

“Can I get a drink of water too?”

“You want a glass?”

“Yeah I’ll have a cup.” The stainless steel tumbler that Apu filled and gave him was neither. “Looks like you have everything in control, but can I help with lunch in any way?”

“I’m almost done, but sure, how about cutting these,” she pointed towards cucumbers on a wooden board. “Just in like, disks.”

“How was your travel,” Ben asked. While Apu focused on cooking and spoke about attending conferences she had no interest in, he tried to work the knife she had given him. The little serrations were blunt and got stuck in the cucumber skin instead of slicing through. The cheap plastic handle barely afforded him a grip, and the thin blade buckled when he turned it this way and that. Under his breath, Ben cursed this knife that wasn’t even fit for butter, and rammed it down, finally separating a cucumber chunk that went rolling on the counter. Ben caught it, but not before Apu spun around and caught him in the act, his arm outstretched.

“Oh, are you looking for something to put the slices in? Here,” Apu handed him a plate.

“You said there was a lot of flying,” Ben said to keep her going, so he could return to his struggle.

“I spent so long in flights that I involuntarily reach for a seatbelt when I sit down now. I hate flying. I’m afraid I’ll be jet-lagged for life.” Apu would’ve continued but for a high-pitched gasp from Ben.

He had cut himself. Apu went over and they hovered over his thumb. “It’s not as bad as I thought.” Most of the gash had been absorbed by the

thumbnail, where the knife's serrations had flaked off the surface in a ripple. A fine red cut rounded the tip of his thumb, which bled.

"I'll fetch a band-aid." While Ben applied pressure, Apu wrapped up his thumb, firming up the edges. She told him to sit down while she laid the table.

"That was lucky," Ben said.

"Or maybe the nail just did it's duty. That's what it was made for." Ben looked puzzled. "Let me tell you a story. A lunchtime story." Apu shoved aside a stack of papers on her dining table to make space. "From the archives of Indian mythology, the story of how the nail came to be. Because humans did not originally have nails, claws being the mark of animals and demons."

"There was once a sage, a hermit, invariably old and wise, who had acquired divine powers after years of penance in the Himalayas, this being a tried and tested method of currying favor with the gods."

"Like a baba?" Ben said, remembering what Ravi had told him.

"I'm impressed," Apu laughed, "think of a high-ranking baba, a baba of babas. On one occasion, he is traveling through a forest and stops for the night at a little hut, as ascetics do. The poor couple who live there are honored to welcome him. The husband clears a sleeping area while the wife cooks dinner. She cuts her thumb, much like you did, and because she does not have a nail, the wound is deep. But she stanches it with a rag and continues, biting down the pain. She even serves dinner with one hand behind her back, hiding her suffering."

Apu finished bringing everything out. She sprinkled salt and pepper on

the slices of cucumber, and then wiped her hands on the ends of the faded shirt she wore. Her fingers left behind turmeric streaks, making it seem to Ben like her shirt had been licked by flames. They began eating.

“After the sage has eaten his fill and quenched his thirst, he declares the meal fit for the gods. The couple bows in gratitude, and he notices drops of blood fall to the floor between the wife’s feet. The sage is horrified, thinking he has been defiled by a repast stained with unclean blood. He flies into a volcanic rage. Storm clouds gather over the forest, and the animals living there sense impending doom. The couple fall at his feet, inconsolable, begging for mercy.”

“That is when he sees the soaked rag around on the wife’s thumb, and understands what really happened. His hands which were raised to rain fire now gently bid the couple to rise to their feet. Their devotion has won him twice over. He blesses their bloodline, and decrees that henceforth humans will be born with nails for the protection of their fingers.”

“This lunch is amazing,” Ben said between mouthfuls. “Do you cook a lot? You need to tell me a story about the origin of good food next.”

“I’m just an average cook.”

“Only average?”

“Let me put it this way. If I had been born a generation earlier, I would’ve been a career housewife. Cooking would have been part of my job description, and I think my mother-in-law, my boss, would’ve given me a passing grade. I say this because there are some excellent cooks out there, like my mother.”

“I see. My mom didn’t cook much. My dad did most of it.”

“Sometimes when I’m cooking, I imagine that my mother is right there, looking over my shoulder, checking how I’m doing. Behind her is my grandmother, looking over my mother’s shoulder, and behind her is, you get what I’m saying.”

“A sequence that stretches back over generations, perhaps to the wife who cooked for the sage?”

Apu laughed, “You just came up with a perfectly reasonable origin story for Indian cooking.”

After they had finished and Ben helped put away the dishes, Apu said that she now needed something sweet. They moved to the living room, where she planted herself in one corner of the couch and began fishing in a bag of chocolates. Still standing, Ben saw that it had stopped snowing. “I should get going,” he said as he made a large yawn and stretched.

“I hope you didn’t make great plans for the afternoon. I should’ve warned you, rice for lunch will put you to sleep.”

“Great plans rarely occur to me.” Ben saw Apu beckon him to the couch. He chose the far corner away from her and was about to sit down when she stopped him.

“No not there! Here,” she patted next to her, and Ben went over. “The frame at that end is broken. It would’ve caved in.”

“I think your house is trying to kill me.”

“It might be feeling protective. Hey, I had to ask you something,” Apu said, and Ben looked at her. “It’s about this couch actually. I’m getting rid of it. A church has offered to take it off my hands, tomorrow morning. It’s the same church at whose giveaway I sourced it originally. But they

are short on labor, and told me to find help if I could. Just to move it out from the living room.”

“Tomorrow morning?” Ben leaned back with his hands behind his head. “Yeah that should work. I can be here.”

“Thank you. There was one other thing. I was in France after the conferences, and it was really nice. I spent all my time thinking about research and riding around in a bike. It was a great deal. But I did start to miss home, and I am happy to be back. I’m also glad the first person I get to see after returning is you.”

Apu played with the empty wrapper of a candy bar, and continued. “When we last met, you expressed interest in doing something more with our relationship, more than friendship. I had time to think about it, and I like that too. I think it’s a good idea.” She relaxed her shoulders. “I’m sorry if I sound as stiff as a research proposal. But I mean it. This lunch wasn’t just a means to get your help with moving furniture.”

Ben smiled. “I’d be lying if I said I haven’t been thinking of you. Or that I wasn’t excited when you called me over. Even though I was prepared to not hear from you again, what with us being from different walks of life. Asking you out back then, it just felt right.” There was a pause from Ben before he spoke again, “This is the happiest I’ve been in a long time.”

Ben rose to his feet. “I really should get going.” Apu watched as he layered up, preparing to go outside. “I will say though,” Ben said while knotting the laces of his boots, “for someone who was just in Europe, you could do better chocolate than mass-produced Hershey’s from a grocery store.”

“Shit, I do have better ones to offer you. Come back in.”

“Next time,” Ben smiled, stepping out the front door. “I’m just relieved there is a next time. I tried to think of fun activities for us to do on my way here, but kept drawing a blank. I must have been too nervous.”

“See you tomorrow,” Apu gave him a short wave from her doorstep. Ben responded by closing the distance and lightly embracing her. Hands on her shoulders, he asked if he could kiss her. Apu would later try to remember the exact manner of her assent, whether it was vocal or a faint indication in a brief moment, but it was a yes, for the next second he was kissing her. The one after that she was leaning into it, and by the third it was over, and Ben was gone.

* * *

The kiss sent reverberations throughout Apu’s interior before settling in her gut as a knot of worry. She despised the feeling, and to dispel the anxiety, the first step was to make sense of it. She spied on Ben from her living room window till he was out of sight, then stepped out for a walk of her own in the opposite direction.

At first, all she could do was stay warm and bask in the beauty outdoors. When she looked back at her home, her footsteps were the only imprint in the untouched snow. Her mind went to the string of matriarchs watching her, every generation a link in a chain that traveled across continents, back to the land of her birth. She felt the combined weight of their grim judgment on her actions. Apu had to remind herself that she had stopped caring about what they thought, had loosened those ties years ago. She had made peace

with simultaneously being the golden girl and selfish sheep of the family. So that any hold they had on her was an echo of their expectations, a model of the mothers that had been impressed on her mind, and not something that existed in reality.

Apu tightened her scarf to trap her warm breath, and continued walking. Ben made her feel desired, a feeling that had been damaged when she was still young. For instance, there was the time when she was in high school, studying hard. Her brother Amit was home from his first semester in college, triumphant in the very nationwide examination that Apu was preparing to crack. Amit was watching a cricket match, reclined on a sofa, while Apu sat cross-legged on a bed in the same cramped drawing room, speeding through a mock test. An uncle plopped down beside Amit and slapped his back.

“Hey champ, made any girlfriends yet?”

“There aren’t many girls in my college. You know that.”

“It was a trick question. There are no girls in engineering, only non-males,” the uncle guffawed.

Apu could concentrate through blaring commercials of twenty four-hour television, through all the domestic bickering and haggles that made it through the thin walls of their home. But this remark by a family member got to her, and was a messed up thing to say when she was right there.

Apu decided to hike up a private street leading to a house on an incline. It was still early to shovel, so she had to trudge through a couple of feet of snow. The prospect of getting close to Ben was setting off visceral, conditioned alarms in her. She remembered a time in grad school, when she was still roommates with Shailja, when she was in a group walking home

at night after attending a house party. There were four of them. Shailja walked ahead with Sanjay, her eventual husband, while Apu walked beside Rahul, who she had known for the past few months and seemed pleasant enough. It was late, a time when walk signs beeped for no one. Shailja was engrossed with her then burgeoning boyfriend.

“If you wanna fuck, my place is empty,” Rahul suddenly slurred into her ear. Apu dared a look at him. In the darkness he looked slanted, pleased with himself. Apu somehow stalled him till they got to his home. Rahul was too drunk to operate the lock of his front door, and needed Sanjay’s help to kick him into bed.

“What happened Apu?” Shailja came to her side afterwards, noticing that she was shaken. She told them.

“That asshole, I’ll fuck him up right now,” Sanjay started.

“What’s the point, he’s already out cold,” Apu said.

Sanjay resolved to walk them home, and did most of the talking, while Shailja held Apu’s hand.

“Maybe he was joking around,” Sanjay reasoned.

“He looked clumsy, but also reckless,” Apu said.

“Why didn’t you say anything? What did you say to him?”

“That we didn’t know each other well enough yet. That I was tired and just wanted to go home tonight.”

“But that’s not true! You should have just told him to fuck off. Shailja and I were right there if you needed.”

“Which was my one consolation. I bet that he wouldn’t do anything foolish. But I also couldn’t risk refusing him outright. I couldn’t tell how

he would react.”

Sanjay followed them up to their apartment, helped himself to a midnight snack of their cereal, and continued debating with Apu, oblivious to her fatigue. “It’s not right.”

“Caution with boys Sanjay, that’s how we were all trained growing up,” Shailja explained.

“I’ll talk to him.”

Except that Sanjay didn’t, and nor did Apu expect him to. That was when she quietly withdrew from the larger Indian friend circle they were all part of, which played in well with Rahul’s gossip of Apu being self-absorbed and stuck-up. For the present, the relevant question was whether she trusted Ben. As soon as she posed the question to herself though, she realized that it was a purely formal one. For things wouldn’t have got so far without her trusting him.

From the grounds of the mansion at the top of the incline, Apu had a sweeping view of Dalton Park, which was delicately frosted with snow. She was reaching the end of the emotional puzzle she had set out to solve. The last piece was the reality of physical attraction, something she did not admit to herself readily enough. She was attracted to Ben, and said it out loud in her mind now. She heard a sound, and saw a figure in an attic window of the house observe her from behind a curtain. It was a signal to go back. The past had faded, and Apu felt like her demons had died. She was ready to try again, to take a step of her own.

* * *

The church sent a retiree and a high school kid to Apu's the next morning to help with the move. She limited her contribution to a box of donuts, and was happy to let Ben take over negotiations. Getting the couch out the front door was quickly rejected. Instead, they decided to try the sliding doors in the dining room that opened into her backyard. They'd have to rearrange some furniture to make space, which Apu said was alright.

Sleeves were rolled up, and Apu stepped aside. As soon as they lifted the couch, their expressions told her that this was a heavier beast than they had come prepared for. With Ben shouldering the bulk of the front, walking backwards, they were able to maneuver the couch halfway out before getting stuck.

"My hands are getting sweaty," the high school kid said, and shoved. There was a loud crack. Ben looked worried that they had scratched the door frame, but Apu mouthed to him to not worry about it.

"We need to retract," Ben said, and they undid their progress, put down the couch, and took a break.

An alternate strategy was discussed. They would start similarly, but rotate the couch in the opposite direction at a critical point. They were backtracking and trying another path, just like a search algorithm, Apu thought. They also switched around places, with Ben pushing from the back. They worked better this time, talking through the problem, using the couch itself as a medium of communication, via nudges and shifts of weight. Here's a solution to the problem of blind philosophers facing an elephant, Apu noted, the teamwork of handymen.

At one stage, Apu wasn't sure there was any visual progress, but the

movers could feel it. “Right there, keep pushing,” Ben was cheered on. Apu saw him turn beetroot red with the strain, advancing by inches. Suddenly, an armrest was through, and then the rest followed quickly.

“How did this ever make it inside?” the retiree asked, and Apu sheepishly admitted that she didn’t know. “This guy is strong,” he pointed at Ben, who panted. The couch was carried into the movers’ truck parked out front, and they shook hands with Ben, having already bonded over the episode. While Apu took care of some minimal paperwork, Ben went back inside to catch his breath.

Ben swayed back to the living room, laying down on the carpet, next to where the couch used to be. He pulled a cushion strewn on the ground under his head, and closed his eyes. His knuckles felt inflamed, and he felt the sweet exhaustion that follows exertion course through him. He heard voices outside, a car door slam shut, and an engine drive away, and it all seemed distant. He opened his eyes to a white expanse of walls, and noticed for the first time how empty Apu’s home was. Ben looked at the crown molding connecting the ceiling and the vertical walls, and pictured a tiny person running along there, following his gaze with the tireless efficiency of an imaginary friend.

The little guy had just skipped from wall to ceiling when Apu came into view, closing the front door behind her. As she walked towards him, Ben began to prop himself up on an elbow, but she knelt and kissed him, pushing him down with a hand pressed on his chest.

* * *

Afterwards, when they were still on the floor, with their clothes to a side in a heap, Apu began to speak.

“When I was very young, my family lived in a flat, on the top floor. We were frenzied little things, my brother and I, running up and down the steps. Our home had simple cane chairs for guests, and my father scrimped on whitewashing the walls, which we ran crayons all over. There was a girl, a few years older, who lived on the ground floor. I saw her family as special, sophisticated, and not just in a material sense. They lived in the same flat after all. It was how they carried themselves. She was reserved, an only child with few friends. But she doted on me as a cute plaything, and brought me inside her home a few times.”

“One night, it must have been a festival, everyone was downstairs. Imagine, a hundred families, the entire colony, outside. People often left their doors unlocked back then. I knew that. I slipped away to go explore that girl’s ground floor house. Their home was unlocked and empty, and I let myself in. A night lamp was on, a red bulb with a blackened dome, a lightbulb eclipse with the dim color of intrigue.”

Apu continued as if sleeptalking, staring into the distance, her voice steady. “I tiptoed over to a showcase that doubled as their TV stand. I was small, but at my eye level in the showcase, clearly lit by a yellow bulb that was on in the cabinet, was something that had caught my attention on previous visits, a complete lego set. Us colony kids had heard of legos. Someone might own a collection of odd bricks, or a single policeman. But this was majestic, imported, a scene of a royal wagon drawn by mounted guards. It had trotting horses, rich livery, and little weapons for the guards.

But even more captivating was what was in the wagon, the treasure that was being transported. It was a chest of gleaming coins, perfectly round, perfectly metal, each one neatly ridged and stamped with the logo of lego.”

“I ran away before anyone could find me. I don’t remember seeing the set again. I now question if the girl actually owned it, or if it was something I had briefly seen in a pamphlet. More importantly, my mind kept going back to what I felt in that moment. What was that pure, consuming desire I had for it? What pleasure would I have felt to have actually touched it? And later, when I was older, was there anything in reality that I could want as intensely as that memory?”

Apu finally looked at Ben, “I think one answer is sex.”

* * *

Over the next few weeks, Apu got to know Ben’s body. They were in the shower one afternoon, and she ran a hand along his chin, strong but smooth, as if it didn’t need much shaving. If she looked at him at the right angle, past some of his features and into his eyes, she could almost consider him beautiful instead of handsome.

“Do you have sisters?”

“One, Hannah.”

“What does she do.”

“She has a PhD, like a lot of my family. In genetics. She’s a director at a drug discovery startup.”

“Are you close?”

“Absolutely. She’s got my back. You’ve got the one older brother?”

“Yeah, Amitu. Amit. He’s smarter than me. He’d love to hear me concede that. Not smarter by much though. He had enough of studying in high school and then gave up. I think he hasn’t really been able to develop an interest in anything else since.”

The sun’s rays that angled into the shower closet were refracted by the stream of water droplets that acted like miniature prisms.

“Do you have recurring dreams? Nightmares?” Ben asked Apu.

“Like test-taking ones? Not really. I do have one where I need to catch an important international flight. But I’m stuck in a cab in traffic, running out of time. Or I discover I’m in line at the airport, but woefully unprepared with travel documents.”

“I’ve heard US visa issues can be rough.”

“It is what it is,” she shrugged. “I’ve not had problems. In fact,” Ben saw Apu stare into space while thoroughly sussed from head to toe, “I remember the formation of the nightmare.”

“The rare birth of a recurring dream.”

“Because missing a flight isn’t my innate or childhood fear. The first time I had the dream, I was unsettled for a whole day. Which in itself felt ridiculous, that something unreal could be such a downer. Then I had it again after a few days, as if my conscious worrying gave it power.” She stepped out to let Ben use the water, and began vigorously drying herself with a coarse towel. “I remember hoping the dream wouldn’t repeat, which was enough for it to become recurring. Like a self-fulfilling prophecy.”

* * *

They spent one entire evening in Apu's bed. Apu felt sore in places where the muscles hadn't been used. No lights were on in her house yet, and she was falling asleep.

"Do you miss India?" Ben asked, which woke her.

"I don't. I don't know. I don't think that question is meaningful anymore."

"Tell me more."

"I'm happy here. My life has reached a stationary point, with increasingly smaller deltas of change. I don't feel like being anywhere but here. It's not a place I made, but I have made it my own. But the here I'm referring to is a small circle, with Hill Building at its center and Dalton Park at its edge. I haven't explored our city, let alone America. I haven't made sacrifices for this country, or become part of its fabric."

"It's not like India has been holding its breath for me either," Apu continued. "The small town I'm from used to be green, with clean air. The big Indian cities I would've ended up in if I stayed were gray, choked with dust and concrete. Has my hometown gone their way as well?"

The talking was making her hot. She moved Ben's arm laid across her and shifted to a side, from where she could look out of a bedroom window. She could see a maple in her yard, gently swaying, nodding at her in the fading visibility. "Maybe all I wanted to be happy was to be in a place where the sunlight would come running up to my knees, where I could find the constant company of trees."

She flipped back around to Ben, a sharper look on her face. "Who am I kidding. What I always wanted was to be a highly-cited academic at a top

American university.”

4

Apu's favorite seat on a public bus was the one just behind the back door. It was far enough from the front that the bus driver did not yell at you to move along to make space. The rear seats were raised which offered a better view through the windows, and she liked being able to exit by swiveling out of her seat and right through the back door.

But on this day, when Ben was taking her to one of his favorite restaurants along an unfamiliar bus route, her favorite seat was taken. A man was half-asleep there, and when they walked past him he squeezed himself further into his jacket. His face was splat against a window, as if melting from it, and would no doubt leave the smirch of sleep which future riders would see as an oily haze on the pane.

"Superbowl," Ben said excitedly. She followed where he was pointing and saw a boarded-up storefront with the name Souper Bowl go by. "Clever name for a joint in a football-crazed city. Every time I see it I wonder what came first, the restaurant or the name."

"Meaning?"

"Did they decide to open the soup kitchen first, and then think of a name? Or did the name occur to them, out of chance, and it was such good wordplay that the owners were compelled to drop whatever they were doing and enter the restaurant business."

Either way, looks like they couldn't remain in it, Apu thought. She did not frequent this neighborhood. Graffiti appeared on the desolate faces on buildings, some of which approached muralhood in Ben's narrated estimation. Even the bus route felt outdated to Apu. At one point they turned

onto a street that was too narrow. Branches of trees whipped against the bus, and someone shut a window in a house down the street with practiced safety.

Ben called their stop, and after getting off Apu waited for him to figure out the remaining directions. “It’s a bit of a walk from here, and I always have trouble with the last section,” he said, absorbed in his phone.

The days were getting warmer. Apu spotted a spent lottery ticket emerging from a block of melting ice. Manholes exhaled vapor like nostrils of the road. The man sleeping in Apu’s seat had also got down, and she gave him a wide berth as he limped past them. She watched him walk up the stoop of an apartment building where the front door was barred with a metal grill. When he began rattling it, Apu looked away.

“This place is pretty shady,” she said.

“It’s not, it’s perfectly safe at this time of day,” Ben reacted. “Alright, yes, I know why you’d call it kinda sketch. But look at that architecture,” he pointed at the apartment building with the grill, the stoop now empty. “The brickwork, the terracotta tips, this was once a prized neighborhood, and later a working-class one. Then the city ran a thoroughfare through its heart, bleeding it of its vitality.” Ben had the directions by now, and started walking. “But the future is looking good. Businesses are opening up. With the low rent attracting artists, there’s a good thing going in terms of community, you’ll see.”

The place Ben took her to looked like any other century-old single family home on the outside, but turned out to be a explosion of shimmering antiques within. Apu began to see some of the charm Ben talked about,

and soon lost herself in an aisle with pins, wedding rings, and picture frames stacked in felt cases. The floorboards creaked under her, the noise covered by heavy rugs. She found a tub containing screws and nuts labeled robot parts, which made her laugh. Snaking into the next aisle, she found stamps and collections of posted letters, some still unopened. The slow cataloging of objects served to calm her down. Ben had been right, she liked this place, and she wanted to tell him, but he was nowhere to be seen. He had either left her in peace, or was lost in his own wandering.

Apu was inspecting a solid stack of books when she turned a corner into a bright room filled with some of the most beautiful young people she had ever seen. Most of the store was dark and draped, but this room was sunny and home to secondhand clothes. She felt like she had stumbled across thrift-store nymphs at play, sizing wares, flitting from hats to accessories, protected from the outside world. Apu backed up, and in doing so came up against a hard surface.

“Could you not lean on that,” a dour kid with a sandy mustache spooked her. “It’s a grandfather clock.”

“So sorry,” Apu looked up behind her.

“It’s okay. Happened to me all the time when I started working here. The thrift is our most popular section, but if you ask me, the real treasures are pieces like these.” Apu didn’t have much else to say, but he seemed to read her mind. “If you’re here for the lunch, it’s through that door over there.”

The food was laid out on adjacent tables, buffet-style. Apu joined up with Ben at the head of the line. “Cash only,” a tall girl in a black skirt

and matching bangs said, for which Ben had come prepared. “Would you like to hear about our specials?” she asked dreamily. Apu passed, but she heard Ben stay and make conversation.

The food was a vegan spread, heavy on tofu and zucchini, and not much to Apu’s liking. She found an empty table to sit down and observed the crowd. The people here were assorted and curated, much like the furniture or cutlery. Everyone was thrifty and tasteful, and uniformly younger than her, including a couple who came with their toddlers. They were all good looking, but with subdued expressions, as if weighed down by an awareness of their shortcomings. When Ben arrived, bearing multiple plates, she saw how he subtly fit in, in the shade of his pullover, in how he seemed to be at home.

“Oh great, they have live music today!” Ben offered to rearrange their chairs so Apu could get a better view, but she shook her head, saying she was alright. “This music is really good,” Ben said as he worked through lunch.

“There’s so much creativity here, even if it’s simple. It makes me think of the incremental, jerry-rigged papers we produce,” Ben said, more talkative than usual. “Our institutions are supposed to be the ones whose agenda is innovation, while the artists here might not even have steady jobs.” Apu looked on somberly as he spoke. “As I say that, I realize it’s an unjust assessment of academia. The fault is in me. I spoke about Souper Bowl earlier today as if the power of a disembodied idea were enough to move things, but that’s not true. Someone has to put in the work to make ideas a reality. Just like it takes effort to run this place, to create a space for

artists. I don't have that kind of daring. I'm not sure I have the stamina to run the distance with a good idea, even if it were handed to me. When I now think about my choice of doing a PhD, I wasn't answering a higher calling to the research life. Factor in my good grades, ambition, a family that prides intellectuals, and what I did was predictable."

A set of songs ended to much applause, and Ben felt that Apu merely mimed along with the act of clapping. Enjoying the music had set his tongue loose, and he regretted his monologue, especially where his thoughts had ended up, and how he had made things about himself again. He felt bad that Apu hadn't said anything. He hoped that she was enjoying herself, but she was blank and he couldn't read her. The singer-songwriter performing for them took a break, introducing himself as a recent transplant to the area, where he had got a day job as a barista.

"I don't know about creativity. I would never choose to be a coffee-grinder," Apu told Ben.

"Which only means you are privileged enough not to."

Apu scowled, but did not respond, at took out her phone instead. Ben immediately wished he hadn't retorted so sharply. "Do you want to check out dessert?" he tried to make up. "I saw that they have some good-looking cakes, including a bundt chocolate."

"No, thanks, I think I should head back soon, sorry."

"Oh okay, that's fine. I can check when the next bus is," Ben said, getting his phone out too. "They're a bit less frequent on weekends."

"I just got an uber, if that's alright," Apu showed him her phone with the ride already booked. "It'll be faster and I don't want to waste time."

It was now Ben who looked unhappy. Apu felt bad for rushing Ben through the rest of his lunch, but recognized that it was his turn to act out. She thought about telling him he could stay back if wanted, but thought that it would only make him feel worse. They had to walk out in the middle of a song when Apu's cab arrived. When they got in the car, Apu offered to add his home as a stop, but he said it wasn't necessary.

Apu spotted a coffee shop as they drove by. "Hey, that place looks interesting", she told Ben.

"I know, I've been there," Ben said, turned away from her. "But what would the point be, you don't like coffee."

* * *

"Hannah, is this a good time? You seem busy," Ben told his sister after finally getting her on the phone.

"Of course! I was just getting brunch with a friend." Ben could hear her walking outside. "I'm never busy. Life in industry is like a paid vacation after a PhD," Hannah laughed. It had been years since his sister had joined the adult workforce, but she kept making that joke, as if she still couldn't believe her good fortune. Except at home, where their mom didn't take the joke well, reading it as another sign of their generation's laziness. "How's the relationship?" Hannah was the only one Ben had told.

"You think mom and dad would like meeting Apu?"

"Wait, what?" Ben could tell he had Hannah hooked into the conversation early. "Wow, I didn't realize things were so serious," she said.

“I think I’ve always had to be serious with Apu. Right from the start, even if I didn’t realize it at the time. Otherwise it wouldn’t get this far.”

“It hasn’t been that long,” she said. Ben could also count on Hannah to be on top of their relationship timeline.

“It hasn’t, and it’s not like that much has happened either. With anyone else, this would just be a girl I’ve dated for a bit. But with Apu, I won’t go so far as to say she’s someone special, but she’s definitely someone I respect a lot.”

“Are you spending a lot of time together?”

“Off and on, but not as much as I’d like. I wanted your read on the situation. I have a vague worry that something’s up in Apu’s head. But it’s probably nothing. The semester is well underway and she’s probably just being a busy professor.”

“Did something happen between you two? Did you do something Ben?”

“No, it’s all good, honest.”

“Well then, have you considered asking her what’s on her mind?”

“I don’t think that would work,” Ben said. He was at home and he moved positions from one chair to another. “She can be quiet, and I feel like I have to infer her viewpoint. I guess, more broadly, I’m trying to figure out what the relationship looks like to her, cultural differences aside.”

“I think you can be explicit and ask her. This is a professor. She’s going to have strong opinions, so don’t you worry about offending her. You’re not dealing with a young impressionable mind.”

“I know, what I mean is, there’s some amount of hesitation, guardedness around her, which I need to navigate. Like I had to be measured with asking

her out. I could sense that she couldn't do it, even if she thought of it. It's a relationship that needs leavening."

"I'm going to play the devil's advocate and tell you to be more direct Ben. You're no saint, and I mean that in a good way, that you're not endlessly self-sacrificing. You have opinions and desires too, and you should be open about them. Also, you won't like me saying this, but I know how professors can be. I've been through grad school as well. You say that Apu is her own person, but I see that as headstrong. When you say she can be private, I almost hear that as self-centered."

"No, Hannah," Ben stood up. "I'm the one in this situation, not you, and I'm handling it. She said yes to me." As he defended his ways to Hannah, Ben realized he felt pride. Pride at having read Apu, at all the choices he had made of what to say to her, and when. It was a precious feeling for him at a time when achievements were scarce.

"Has she mentioned you to her friends? Have you picked her up from her office at lunchtime?" Hannah questioned Ben. "Have you both walked over to those trucks you have on campus, where the food is cheap and plentiful, and then sat outside on picnic tables eating, so you could introduce her to your friends? The things you would do in a typical serious relationship." Hannah's voice dropped a notch as she asked, "Does she know about your struggle with research?" Her words sent Ben from feeling confident to being stumped rapidly, and he found that he could not counter her.

"Hey, forget about what I said," Hannah said after Ben didn't say anything. "Sounds like my withdrawn brother found a moody lady, and everything about your approach seems reasonable. You got this, you know

what's best. I'm on your side, looking out for you." He was still silent, and she asked, "Where are you Ben?"

"At home."

"I meant with research."

"Do you think the problem with my PhD was bad timing? I had so much conviction coming right out of college, I was so eager to get cracking with it. What if I had worked instead? What I would have lost in time would be made up for in perspective and discipline, and maybe it would've worked out better."

"How is any of that musing useful Ben? You can come up with any number of excuses when things aren't going your way."

"Alright then. Since you put it so plainly, research is not going well."

"What are you doing about it? I hope you're not basking in your new girlfriend's proximity. She has a brain like a reactor between her shoulders. How are things with your advisor?"

"I haven't met him in months." Ben admitted. He couldn't nurse lies with Hannah.

"Oh, oh no. That's not good at all."

"Yeah, tell me about it," he said, cool, attuned to his fate.

"He's a terrible guide. Why are you being a good grad student and standing by his side? Have you considered switching advisors?"

No, because this is all my fault too, Ben thought. "At this stage? And walk at commencement one day as one of those ninth-year PhDs I used to laugh at? I can't do that Hannah."

"It's not about what others do or think. It's about being rational with

yourself, which starts with acknowledging your current state, and then choosing the best action for improvement. Which might also be leaving the program.”

Ben laughed out. “How do you expect me to be rational? Nothing I have tried works. I am the exception to all prescriptions. Thanks for stoking my insecurities. They feed into a personal fire of torment I keep going, into which, if you’ll excuse me, I am now going to lower myself.”

* * *

“I’ve not seen someone so excited to travel in a car,” Ben said smiling, his eyes on the road. He was driving Apu to a nature reserve about an hour away, in a rented zipcar. It was overcast and Apu had been concerned about rain, but Ben believed they would be alright.

“It’s because I rarely get to be in one.” Apu said, securely fastened in a fetal position in the passenger seat.

“I still can’t believe you never learned to drive.”

“So most of my associations are of being driven around by my father in our family car. I remember when we first got a car. ‘Joy ride!’ my mother would suddenly propose at ten in the night, meaning she wanted to be taken on a long drive. Only she could initiate, but one of us kids would quickly second it by running to her room and fetching the shawl she liked having, in case she got cold.”

“Would you do something like get ice-cream, or go watch a late night movie?”

“No my father would drive us aimlessly, just for the fun of it.”

“Like on the highway?” Ben said as he focused on changing lanes.

“No just around our home, there was no highway nearby. I’d roll down my window and stare outside without keeping track of where we were.”

“One second, I don’t want to miss this exit,” Ben concentrated, and Apu stopped explaining. She loosened her seatbelt and shifted in place. She was going to tell Ben about all that she would see on those family drives, common sights around town which nevertheless acquired an eerie and playful dimension late at night. Haphazard apartment buildings, shuttered stores, threadbare playgrounds. But she decided against it, thinking it would be a disappointment. The images Ben would construct from her words would be approximations but wrong, similar but lacking the cultural essence of how she felt. Like attempting a lego set with the right instructions but different building blocks.

After parking at a visitor center, their first stop at the reserve was a wall of rapids, a renewed attraction after having thawed with the coming of spring. The waterfall was not large, Apu thought, but impressive, both calm and swift, and she could see why it was a point of local pride. It collected in a wide pool, and Apu stayed at its edge, but Ben had skipped over a few wet rocks and was standing on a mossy outcrop to be close to the curtain of water. It was still too cold to be swimming, but a few brave boys and girls were bobbing in the pool, creating ripples that attenuated by the time they reached Ben, weakly bouncing off the rock he was balanced on.

Apu looked at Ben. He seemed enveloped in thought and reflection. He looked serene, but for a line across his forehead that broke the peace. Ben

was almost always composed with Apu, but she could tell there was more on his mind, and here was the visual proof. All the same, she did not feel right approaching him about it, as if it was not her place to ask. If he was in a bubble, she did not want to reach out and disturb it.

“I need to keep reminding myself that we’re in charge of our feelings,” Ben said after making his way back to where Apu had sat down. “Not just directly, but in a second-order way. Our choices influence events, which in turn influence how we feel.”

“I don’t think I understand,” Apu said, finding Ben too abstract.

“I’m thinking specifically about how we do research, which has its ups and downs.” Ben drew a wave in the air with an index finger. “When there’s a discovery, an understanding, or simply some new learning,” Ben’s finger traced a peak, “there’s a rush. That’s what we’re in it for. But then there are the inevitable failures, the disappointments,” his finger turned a downward arc into valley. “and I shouldn’t feel bad at those times, because that’s just the nature of research. I have to remind myself that I could have chosen not to do research in the first place. It’s like, if progress were a sine curve, our emotions shouldn’t track it one-to-one. Instead, we should ride the wave and enjoy the crests. But at the troughs, I need to avoid freefalling and should threshold my feelings, so they remain steady, as in a flat line.”

“If you’re talking about approaches to research, everyone is different. For me, all that matters is my work,” Apu tried to answer Ben in the simplest, most honest way she could think of, which was by speaking about herself. “I’ve let my work guide me, and there is enough and more of work

to keep me busy. I guess I like doing research much more than thinking about it.” It had started to drizzle. “Should we head back?”

“Seems like it could clear up soon,” Ben said looking up at the sky.

“But what if it doesn’t. We don’t want to be stuck on a trail in the middle of a downpour. Don’t you think?”

“If you want,” Ben shrugged, and they turned back.

Apu now saw that the short walk from their car to the falls was only a connector trail, easy and flat with soft brown earth. The actual trailheads lay beyond, and Apu felt bad for holding Ben back. “I’m sorry we didn’t go further. Your hiking boots didn’t get any mud on them,” she said, and walked closer to Ben.

“It’s alright,” Ben put an arm around her, “the hikes are objectively better when it’s not raining. I’m just happy to spend time together, I feel so much better around you.” He leaned over and kissed her.

At that moment, a spotless family of four passed them, uniformed in silver fleeces and carrying styrofoam cups. Apu found herself shying away from Ben under their gaze.

On the return, Ben drove them through a small town instead of hitting the highway immediately.

“We didn’t come this way did we?” Apu asked.

“No we didn’t! I saw it on the map and decided to check it out.”

“It’s pretty,” Apu said, looking at a row of half-timbered houses next to a low stone wall.

“It also looks historically wealthy, probably founded by early mercantile money. I won’t be surprised if the latte family we crossed back in the

reserve has a vacation home here. I shouldn't be so judgmental though. I grew up in a pot-smoking protestant town just like this. I learned to drive an SUV on easy roads just like these." Ben drove past a lush golf course and then followed directions to get onto the interstate. "Speaking of home, my family does this thing where we get together in the summer, because we don't really do christmas. I was thinking, this year, would you like to come home with me?" Ben looked at her expectantly, and Apu stared back at him. "No pressure to say yes, and it's months away, so take your time thinking about it. But does that sound like a good idea, generally?"

"Yeah, yeah," Apu blinked a few times and nodded at Ben.

"Great," Ben said happily. They had merged onto the highway and Ben turned his eyes back onto the road. He began describing his parents as he drove, while Apu felt another set of questions thickening in her gut.

She had said yes to Ben because she felt like she couldn't refuse, but she was actually apprehensive of meeting Ben's family, and she wasn't sure why. Why had she felt embarrassed of being seen kissing him at the reserve? Why did she not like Ben saying earlier that he felt happier around her, as if she didn't want him to rely on her, and didn't want to be beholden to him? But she didn't have the will to pursue these puzzles at the moment. It had started to rain heavily, and she was being lulled by the patter of the rain, and by the sway of the windshield wipers. The last thought she had before falling asleep was that in their relationship, Apu often took the form of a question mark, while Ben was the occasional exclamation.

* * *

Apu was walking outside Hill Building one Sunday afternoon when she saw the lights on in a few nameless windows deep in its bowels. She knew what that was, Ian shamelessly burning the weekend oil, and decided to take a detour to his lab.

Her first impressions of Ian, back when they started grad school together, was that he was a floozy, a fluke admit. He had joined a computer networks lab whose hands-on experiments she didn't pay much attention to. He was a fluke alright, but in the opposite direction, whose research got off to a prodigious start that rivaled her own. Apu remembered her past self from back then as being conflicted. She was vain of her abilities, but also paranoid of failure. Ian, on the other hand, was a calm and collected wizard, fabricating electromechanical trinkets that started popping up all over Hill Building. He was known to fall asleep soldering, and then wake up with his positivity undimmed, ready to mentor more juniors. Ian was honing a talent that would come in handy when he founded his own lab as a professor. While Apu needed few resources, no computers, and just a handful of smart researchers, Ian managed an army of undergrad tinkerers, gnomes in his hillside smithy, who turbocharged his work on wireless networks.

Apu started getting to know Ian well only in the middle of their PhD, when her masters friends were all gone or graduated. She now considered herself fortunate to have him as a close friend. She had seen the hair above his temples turn gray, and was one of the few people to know that he carried a pair of rarely-used reading glasses. As she entered his lab, she thought of telling him about Ben and her.

"Giving your students Sundays off so you can work alone in peace," Apu

said, and Ian looked up from his work, “a master stroke. Tell me what I’m looking at. Another best demo award winner?”

Ian held up a small router. “I have repeaters all over the lab. I’m trying to coax commodity hardware,” he said, fiddling with the device in his hands while looking at a computer screen filled with static, “into becoming eyes for me. Come on.” An image resolved on the screen, and Apu leaned over for a closer look. It was noisy and blurry with shadows of data, but the shapes of desks and chairs from another room in the lab were unmistakable.

“Wow. I see it, that’s really cool. I also see your future, crystal clear. I see ten journal papers this semester, guaranteed.”

“You’re one to talk. Say, I haven’t seen you in on weekends as often,” Ian said, “is there a mystery man in your life?”

Apu’s mouth hung open. “No! Of course not,” she recovered. “Keep wishing.”

“I don’t know, I can’t see any other reason for you to be slacking off,” Ian looked around dramatically. “I’m just using my favorite detective rule. When you have eliminated the impossible, whatever remains, however improbable, must be love.”

“Excuse me, that’s my rule. You got that from me,” Apu said. “Let me remind you of when I came up with that.” Ian rolled his eyes as Apu began her story. “The university appointed a new president during our PhD, with a lot of fanfare. It was like a coronation, with celebrations that lasted a week. Where did they get the money? Anyway, in the middle of his term, he unexpectedly quits to take up a new administrative position.”

“In Saudi Arabia.”

“In Singapore, see you don’t remember. No one knew why, he made no public statement. The university scrambled to find a replacement. It was then that I predicted that the reason must be a romance. Fast forward to a few months later, and it surfaces that he had walked out on his family of thirty years because he was banging some chick in Singapore.”

“That chick was a provost herself.”

“Important detail to remember.”

“You want something to drink?” Ian put away the router and walked them over to a kitchen corner, where there was unlimited coffee and pop-tarts for lab members. He told Apu to sit down at a small table. “Sorry I don’t have peanut butter, otherwise I’d give you some,” he said with a smirk. “What, don’t give me that look. I’ve seen you mouth spoon after spoon straight from a jar,” he laughed at her, and opened a small fridge to retrieve a blender filled with a sludge.

“At least I prefer real food, not that supervillain smoothie you’ve survived on for years,” Apu said as Ian filled a big-ass cup with the contents of the blender. He sat down and rubbed his eyes. “You look sleepy,” she told him and he gave her a tired smile.

“Apu, there’s something I need to speak to you about. I was going to wait for the week to start. But you’re here now, so this is as good as a time as any.” Ian’s tone had changed and he had straightened his expression. He did not have to wait long for Apu to pick up on the shift in conversation. “One thing I will tell you is not to take this seriously. No, that doesn’t make sense, this is a serious matter. But try to be calm. I know you, so try not to take this too intensely, at least to begin with.”

“What is it. Just tell me.” Apu locked her eyes on Ian, and he looked away.

“Your student Jess, she doesn’t want to be your student anymore. She came to the department a few weeks ago, and as I’m the PhD student mentor, that meant speaking with me. I always thought that position was a wash, but here I am today in this difficult situation.”

“So she’s dropping out of the program?” Apu’s mind raced, thinking of the repurcussion to her work.

“Jess doesn’t know. She’s not sure, all she is doing for now is taking a break. We decided that we can put a hold on things, and she will continue to be in good standing with the department for a few months, after which we will evaluate. She says she is still interested in research.”

“That’s a lie. She can’t do research,” Apu shot back.

“When she comes back,” Ian continued, ignoring Apu, “she can look for another opportunity if she wants. That could be working as a research scientist, or working with another advisor, I don’t know, whatever, that isn’t important now.”

“Why, why am I hearing this news now, like this,” Apu dug a finger into her brow.

“It’s what Jess wanted,” Ian said, and immediately held his hands out when he saw Apu start. She backed down.

“How dare she, that ingrown snowflake,” she felt her rage amping up. “She couldn’t prove a corollary that wouldn’t make it to an appendix.”

“Apu.”

“She’s a waste of taxpayer money. She doesn’t have the guts to face it,

so she's gone behind my back."

"Apu stop. That's not necessary. Have you considered that maybe this is why she didn't approach you directly? That your tendency to react this way is why she didn't tell you?" Ian said to stem her vitriol.

"Did she say something about me?" Apu saw Ian regret his words and shake his head. "No, Ian, tell me, did she complain about me? Am I going to be charged with misconduct, or worse, counseled? You can't tell me because of non-disclosure."

"That's enough," Ian said firmly. Apu looked down at her hands. She had been clenching the metal sides of her chair, and they had been biting back violently. A few thick teardrops fell on her palm, surprising her. She had not seen them coming. Apu sat back and checked her flow of tears, instead sublimating them with a force of her will.

"Apu, the most useful thing I can tell you right now is that this is not about you," she listened to Ian. "I mean that in all senses. You're not being harmed in any way. But also, don't make this about yourself. It's about the kid, and helping her right now might look like you leaving her alone."

"I understand," she said, regaining her composure.

"That doesn't mean I'm not thinking about you." Ian laid a hand on the table towards her. "This situation is not nice for you either. If you need to take some time off, a few days." She remained silent. "Apu, are you okay?"

"Thanks Ian," she inhaled and stood up abruptly, "better you informing me than anyone else. I realized just now that this situation isn't easy for

you to handle either. I'm sure you've looked out for me, in ways I wouldn't even know."

"If you want to talk about it again some more."

"I'm good, and I don't need time off, thanks. I've been on a break for long enough." Apu left, and Ian let her go.

Apu did herself a favor and marched to her office. She should have anticipated this, she told herself. Jess' progress, always spotty, had been slipping over the last few months, and Apu had let it slide. She had watered down her mentoring style with Jess, and it had backfired. Apu was a fool who had allowed this mess to happen, and the next question she needed to answer was why. She felt her anger return with blunting force, directed inward this time. So she seethed, until she entered her office, where the anger found a reason, a face, settling on the name which was popped up on her computer screen along with an innocuous message asking her when to meet next, Ben.

* * *

After ignoring multiple messages from Ben, Apu finally agreed to have him over at her place. She had been keeping busy these last few weeks. Elena was gone, and Apu was reviewing the final draft of her thesis, which read like a sequel to Apu's own. Apu was also revising time estimates in her grant applications, now that she was in the embarrassing position of having no students. She would have to wait for the next academic year and attract new admits, something she was loathe to do. The incident with Jess still rankled her. Apu was not sure how dinner with Ben would go, and was

prepared for it to be their last. It seemed bizarre that he was thinking of introducing her to his family not long ago. She had not bothered to cook for tonight either. She spent the whole day at school, picked up takeout on her way back, and rushed home to be on time for Ben to come over.

She didn't have to. Ben was uncharacteristically late. Apu got the food out of disposable containers and laid the table. She messaged Ben, and occupied herself with cleaning the kitchen when he didn't respond. Dinner had run cold, and it was well past dark by the time Ben arrived, looking like the devil, fatigued and worried dry.

"So sorry I'm late. Apu, I'll just tell you. There's been a disaster," he stammered. "My advisor said I'm running out of funding. He needs me to propose soon, and then defend, I don't know, months later?" Ben seemed like he didn't believe his own words. "I've been really stressed. I started for your place, but couldn't come over directly. There's so much on my mind. I've been walking in circles, unable to decide whether to tell you or not."

Apu raised a hand to stop his rambling, and they sat at her dining table. "Tell me from the beginning."

"My advisor asked me to meet him a few days ago. We spoke of this and that, and then he pulls up a spreadsheet, and tells me that he made an oversight in his accounting. That I only have one year of funding left, that I shouldn't count on him raising more, and should prepare to graduate asap. He said all this matter-of-factly, as if speaking to a sack of potatoes." Ben's face turned into a cross of frustration, "That's just irresponsible on his part. I know he's old, but is he also getting soft in the head?"

"Don't say that," Apu said.

“I’m under pressure to propose by the end of the summer. Otherwise he said he’ll have a hard time justifying my status to the department.”

Apu had not seen Ben in this state, and found it hard to put him at ease. She decided to try the path of reason. “Which year are you in,” she asked.

“I’m finishing my fourth.”

“Then your advisor is correct, broadly speaking. Proposing at the end of your fourth year is very plausible.”

“On paper! Most everyone I know takes longer. The department assures financial support in case of unforeseen circumstances! Most advisors bat for their students, not throw them under the bus.”

“An early distress defense is not unheard of. The thesis committee scales back expectations accordingly. You have publications, of course. How many.”

“Two.”

“Journal?”

“Conference,” Ben’s answer made Apu nervous now, and she got up and stood behind her chair. “My advisor asked me the same question. My own advisor, and then he shook his head in disappointment when I told him. As if he didn’t know, as if he never read them.”

“This is all sudden, you must have spoken about it earlier. The thesis, like your research, is something you discuss with your advisor frequently.”

“We hardly meet,” Ben said, his gaze averted.

“This is not a problem that arises overnight.” Apu’s words seemed to agitate Ben further. She had put a finger on a weakness, and instead of

comforting him, she realized she was probing his wound. Apu left Ben and walked around, outside the cone of light above the dining table, and into her dim living room. She walked through the empty space where the couch used to be, the one that Ben had helped move.

She listened as Ben narrated his entire story, about how he didn't get to choose his advisor or his thesis topic. The tension between what he had to do and what he wanted to had led to paralysis, and the passivity of his advisor didn't help. Ben was turning himself inside out in front of her, spreading like the ruptured yolk of an egg, and Apu found it faintly grotesque. This was more personal information than she was willing to discuss with her own students. But she had heard such stories many times before, and her usual recommendation was for the concerned student to drop out, that the PhD was not for them.

"Here, eat something," she warmed some food up for him and sat down at the table again. It was easier to take care of Ben this way. "I already ate," she lied when he asked about her.

"I'm sorry I didn't tell you earlier," Ben said. "The past few months we've known each other have been a relief for me from myself, my own thoughts." His fingers, like spiders, crept over the table seeking her support, and she let him have her touch. "I'm telling you everything now, because I believe things will work out, and my life will be alright, if you continue to be in it."

Please don't cry, Apu thought, I won't be able to bear it. She had expected to rage at Ben this evening, but there was no anger. She felt no pity for Ben either, only a lack of desire. She wanted to be rid of him,

like she would want a drunk to be dragged out before her home was soiled with vomit. Actually, she did feel pity, but for herself, for her clear lack of sympathy and feeling for her fellow beings. She felt like she began to understand something of how she might have wronged Jess.

“Don’t bother with the dishes,” Apu said, and they went up to her bedroom. Ben kissed her goodnight, and it was like a kiss of salt that wilted her lips. Exhausted, and finally calm, Ben soon fell asleep, but Apu was now worked up, as if his momentum had transferred to her, in keeping with a law of conservation of stress. Ben’s good sense and intelligence was one of the things she had liked about him, and that made the failings he had revealed so much harder to digest. She had failed to see his true face.

When Apu slept alone in her large house, she would sometimes imagine a wolf coming in from the wilderness and sneaking into her home. That wolf was now lying next to her, Apu thought, and it was miserable, a sad husk of longing.

Apu got out of bed. She drifted into a room she used as a store, sat down on a folding chair, and took stock by the moonlight. There were unopened cartons, luggage rolled out only on international trips, and many stacks of notebooks, filled with her equations and ideas from over the years. She opened one. It was too faint to read anything, but she could make out a symbol here, a heading there. The outlines of her own handwriting were comforting, and she was sure there were good leads enshrined in the margins. It was like a book of familiar textures, of personal poetry, and it kept her company through the night.

* * *

Ben had stopped hearing from Apu, and not for lack of trying. From a certain point on the bridge that connected the engineering school and Hill Building, Ben had discovered that he could look into a bit of Apu's office. It was here that he stood one night at eleven. He raised his phone to his eyes and messaged.

"Apu, I know you're in your office. Can we talk?"

"I don't think that is a good idea," she replied to his surprise. He squinted, trying to periscope further into her office, but all he saw was the ceiling and the corner of a bookshelf.

"I feel like a lone voice in a hollow room." Ben paced the width of the bridge, like an eccentric out on a limb, and drew looks from the night-time nerds who had to go around him.

"I can't help you, I'm sorry. There's nothing I can do for you."

There was no more from Apu. Ben thought of climbing the stairs to the top and knocking on her door, but saw how foolhardy that would be. Apu had let him into her home, but he would never be able to breach the frontier of her office. He turned around and slowly walked away from Hill Building, realizing he was all alone, as he had been from the start.

5

Ben was startled awake. Not by an alarm, for he had stopped setting those, but by the clamor of his roommate getting ready. Ben pawed around for his phone near his pillow, but couldn't find it. It had fallen onto the carpeted floor. He slid a hand down the narrow gap between the frame of his bed and the wall it was pushed against. His phone came up covered in flowers of lint and dust. Ben cursed, but then lay still when he heard footsteps. There was the clatter of breakfast, and the thud of the front door as his roommate left. It was nine am, and the birds were chirping. Ben cursed their little plans. He himself had nowhere to go. He had been spending most of his days in bed, as if catching up on sleep on behalf of many generations, a sleep of the ancients.

Ben stared at a square of yellow sunlight on a wall. As he looked, it dimmed by degrees and turned a slight shade of pink, perhaps due to a passing cloud. Sleep tugged at his eyes, like the trimming of a sail, and he gave in. Sleep then traveled from the front of his eyes to the back of his head, upending reality and inviting dreams.

Ben sat at the edge of a cliff with a vast sea before him. He knew that the way ahead was across the water, but he was too afraid to dive in. He was afraid of the cold shock that would greet his body. He was afraid that the swell would seize his lungs and drown him. Even if he started swimming, he was afraid of the roaring waves that would throw him back against the shore. He had watertight evidence that this would happen, because he had jumped in before. But he couldn't turn back either, and so his hands by his side alternated between the tension of pushing off and stiff resistance. For

the moment, it was easier to camp there on the cliff with his legs dangling off the edge, from where he could keenly observe the dark storm on the horizon, which was like watching disaster unfold in wide scope.

Ben drifted in and out of sleep. He had to toss at one point due to an ache in his lower back. The mattress had depressed from his lying-in, and Ben felt like he rested on slats. This was a familial ache. He remembered his father complaining about back pains resulting from a long commute to work. At the time he had dismissed his father's ailment as a square sign of suburban life, but it had now emerged in him in less honorable circumstances.

It was night by the time Ben woke up for good. He was sweating all over. The pores of his skin felt nauseous, as if revolting against the fetid, clammy sheets that seemed to be disintegrating from lack of being laundered. Ben stood up. From the lone window in the room, he could make out the vertical siding of the neighboring house. His small bedroom began to feel like a prison, one of his own making. He had to get out.

The house was quiet. Ben's roommate's door was closed, the with glow of an LED row escaping the threshold from within. If his roommate was in, he was lying low. It occurred to Ben that his roommate knew what was up and was staying out of Ben's path, just as Ben did with him. They were playing a mystery roommate game, constructing maps of each other's habits via sounds, all with the purpose of avoiding each other.

It was a cool night. In his haste, Ben had thrown on his bathroom flip-flops, the soles of which had worn down to flimsy frictionless layers. They slipped under his feet and his toes crashed into jagged pavement blocks.

But Ben didn't mind, he was just glad to be outside. Streets ran off in different directions, and he considered where to go next. After years of living in this corner of Cedar Square, he had memorized all the ways. The moon came out of hiding from behind a dormer, and the trees sighed. This was the kind of night in which to keep to the sidest of streets. He decided to trace them all, turning down increasingly narrow alleys, until there was no outlet. Ben felt like he was being broken down and digested by the neighborhood. After the process was done, if all that remained of him was a thought bouncing off the sidewalk, or a viewpoint embedded on a street sign, he would be satisfied. For he could not currently see a way out.

Ben returned to his room feeling alert, but found that he still couldn't make a move. He was a flag that remained limp in the face of a second wind. There was no more sleep left, so he sat around, tracking and dragging time. At one am, his phone rang. It was his officemate Ravi calling.

"Hey man, what are you doing up so late. Working hard huh," Ravi said.

"I wasted the entire day."

"Lies, that's my line. Where are you these days? I haven't seen you in school."

"I've been hiding at home. Where are you?"

"Lab."

"So you're the one hard at work."

"Light. I got bored wasting time in the office. So I came to the lab hoping to get some work done. But I realized just now that I'm a fool, because it made no difference."

“That doesn’t sound true.”

“You’re right. I have always known that I am a fool.”

“You’re not,” Ben started to reply but held back, knowing there was no point in continuing that line of conversation with Ravi.

“It’s okay, I understand if you’re not able to think of anything witty,” Ravi laughed, and Ben smiled despite himself. “Take your time and get back to me. Come into the office sometime dude.”

“Sure, whenever you want. Tomorrow?”

“Done. I’ll be there.”

* * *

Ravi was sitting on top of his desk when Ben got to their office the next morning.

“Close the door behind you,” Ravi said. He proceeded to walk around the room, lowering window blinds and rotating their slats shut, as if hermetically sealing them off from the outside world. “I don’t want to see people,” Ravi explained.

“How are things?” Ben asked.

“Things suck, life sucks. Things are not good, like, at all. Look,” Ravi held up his phone, whose screen was cracked.

“How did that happen, did you drop it?” Ben half expected this to be another of Ravi’s jokes.

“I smashed it against my head. I was talking to my dad, and he made me so frustrated that I started hitting myself. Guess what, nothing happened to me, but my phone broke.” Ravi smiled widely at Ben, his skull bobbing.

It was a dead, humorless smile. If there was any enjoyment, it was morbid, like a wraith taking pleasure in its own decay. Ben was going to thank Ravi for luring him out of loneliness, but now recalled that Ravi's capacity for self-isolation outpaced his own. Ravi asking to meet with Ben might have been his best effort at asking for help.

"What happened?"

"Me and my dad don't talk, I've told you that right. Dude, my mom had liver failure. She was hospitalized. He didn't even tell me," Ravi looked distraught. "Some random uncle messaged me asking if she's been discharged. That's when I called my dad, and he's like, finally you remembered us. I was shouting at him, tell me how my mother is, and he says why, what will you do, you're not here."

"I don't understand. Why doesn't he talk to you?"

"I don't understand either. You and me Ben, we're in the same boat. He has never liked my coming to the US to do a PhD. I've tried telling him about my research, I know he would appreciate it, he's an engineer himself. But he either changes the topic to cricket, or passes on the phone. Here talk to your mother. Now I'm sure he's thinking, I told you so, this is what happens, you're not here to take care of your mother. Who told you to go do this nonsense PhD."

"That's not the end of it," Ravi sighed, "I want Harika to support me at a time like this. Instead she's putting pressure on me to tell my parents about our relationship. When she told her own parents about us, that was her choice, not mine. Because she has to share everything with them and they're so supportive of her. Good for you Harika. But now they're

running out of patience and wondering what's happening between us. I've been made out to be the bad guy, again." Ravi blinked hard, "I haven't been sleeping well."

"What about food?" Ben asked and Ravi shook his head in a no. "Let's get something to eat," Ben opened a small cabinet under his desk and grabbed some cash and coins, along with his keys. "Come on, it doesn't have to be far."

"Her parents are visiting for the summer and she wants me to meet them. But because I don't want to do that, she won't see me. What pain."

"Yeah, now doesn't seem like a good time." Ben led them to a vending machine out in the corridor. Ravi chose funyuns, and Ben put in the fare. They watched as a pack nervously advanced with the turn of a coil, then fell uncertainly and got stuck.

Ravi turned to Ben with a frown and ran a finger in a horizontal line across his forehead. "Read that? That's how bad my fate is. Nothing goes right."

"Or, it could be in your fate to eat something better. Let's go to the Commons," Ben suggested, thinking the walk across the school yards would do them good. "Have you considered getting help?"

"Like what, free counseling for grad students? Already tried," Ravi said with a confident flick of his chin. "The poor therapist gave up on me. I had answers to all her advice. She told me not to compare my progress with other students. I told her I am incurably insecure. She suggested virtual family sessions," Ravi began to laugh, "I said nice try. My parents don't believe in therapy."

“Then what’s the way out?” Ben asked.

“There is no way out. I have to suffer, we have to suffer. Sometimes I think that my parents should die. Or I die. That’s when this will end.” Ben looked on at Ravi with nothing to say. “At the end the therapist in a shaky voice said sorry, your six free sessions are done,” Ravi laughed out loud, “please check with your insurance to continue. Even she wanted to get rid of me. You know who else I saw doing therapy? Junior.” They had reached the Commons, and Ravi stopped outside, doing sit-ups and huffing, a parody of Junior deadlifting. “He thought he could get rid of his depression by working out,” Ravi snorted, “he was wrong.”

“I don’t think Junior will appreciate that impression.”

“You’re right, he could be on his way out from the gym right now. If he sees me, he will snap my spine,” Ravi lolled his neck. “That might be a good way for me to go. Suicide by Junior.”

Ben deposited Ravi at the black couches in the center of the Commons, and went to buy lunch. When he returned, Ravi stretched a hand out at him.

“What did you get?” Ravi asked, and Ben handed him a hummus wrap. “I can make better hummus at home,” Ravi said, after taking a few bites and chewing untidily, “but thanks.”

“Have you asked your advisor if you can take time off? To visit home.”

“Can’t do that,” Ravi shook his head vigorously. “If I go to India, he will use it against me to delay my defense. With great difficulty I managed to strike a deal with my advisor. I’ll do an impossible amount of work for him, and he will let me propose by the end of the summer. I got inspiration

from you dude, thinking we can graduate together.”

“I wouldn’t count on me. What will you do after, academia?”

“No chance. It’s what my advisor wants, but I haven’t told him. He is greedy to grow his academic tree, but so far, it has only yielded bitter fruit. I’ll give you another example. You know the Perkins Medal our department gives out right?”

“No more than you. What about it.”

“Every year, there’s a lecture by the winner, and then we have wine and cheese after. But have you wondered who this Perkins was? Or why they don’t talk about it openly?” Ravi’s eyes lit up, seeing that Ben had not. “He was a postdoc at our department many years back. Unfortunately, he committed suicide. His parents instituted the medal in his memory. Guess who he was a postdoc with. My advisor.” Ravi paused for Ben to respond, then said, “I know what you’re thinking.”

“That’s not what I’m thinking.”

“My advisor is not a murderer. He’s only an asshole. Still, it makes you think.”

“What I think is that we should move on to dessert,” Ben reached into their lunch bag.

“What did you get?” Ravi tried to grab what was in Ben’s hands.

“Wait, watch it, don’t get your grubby fingers all over my share. Hold it by the wax paper.”

“What is this,” Ravi looked dazed after taking a few bites. “It’s like golden butter that crumbles in your mouth. Then some lemon paste hits you.”

“You’ve never had a lemon bar? I mean this is a good one, but still.”

“There you go again, making fun of my upbringing. Not everyone is as cultured as you.” Ravi swallowed the rest. “This has blown my mind. You’ve made my day and my week. Now I think I need a lemon bar every day.”

“You’re welcome.”

“What about you Ben, did you decide on a thesis topic.”

“How can I? I don’t have anything.”

“You have a couple of papers from your early educational simulator work. Just use that.”

“That stuff is crap. A thesis is supposed to be meaningful.”

“Kudos to your idealism,” Ravi saluted and shuffled closer to Ben, “but just give your advisor something that he likes. All that matters is for him to be on board. We’ve both seen advisors who skewer their own students during the proposal. Do you think your guy will be like that?”

“No.”

“No. Because he wants you to graduate, so he can totally retire.”

“I don’t know, it’s not just the thesis. There are so many other things. There’s also the matter of the thesis committee.”

“Ask Becca, Charles’ advisor. She’s young and energetic, and will say yes to anyone. Plus, she’s a really sweet person. Won’t give you any trouble.”

“But her work isn’t even related to mine!”

“You’re not listening. I’ve already booked her for my committee, and I’m giving you this tip as a friend. When word spreads of how chill she is,

her schedule will fill up. As for your external committee member, that good friend of yours at the national lab, Ali. He could've been on your committee, if only he wasn't a PhD student himself. Get one of his colleagues at the lab to agree, bribe them if necessary."

Ben smirked, shaking his head. "My advisor would often tell me that the PhD was just a certificate. That I could think about changing the world after I got the degree."

"I agree one hundred percent. Dude, we are accomplished distraction artists, now is the time to become escape artists. You are one of the lucky few whose advisor provides them with an exit. You want to show the world how smart you are? Prove that by making use of the opportunities in front of you."

* * *

For the first time in her career, Apu had run out of funding. She had tenure, but she had no students. She seemed to have no energy either. Apu had sought to sandbox her relationship with Ben from the rest of her life, but the end had drained her. She had no desire to resubmit rejected grant proposals, and no remaining drive to pursue new ideas. When the department accountant sent her warning emails that her contributions to the common pool of funds were running low, she experienced no urgency. When the admins informed her that she would have to take on more teaching to compensate, she complied.

Apu was assigned one section of the summer edition of intro to machine learning. It was a popular entry-level course with massive enrollment across

majors. Apu had taught graduate seminars before, leading discussions in a homely atmosphere, but she now had to lecture to an amphitheater. She borrowed material from last year, reading out slides in class and making periodic stops for doubts. She elaborated on content that was trivial to understand, and whizzed past the subtle.

Once, a group of students hung around after class, milling about like asteroids, waiting to ask her questions. Apu sent an advanced monograph their way, leaving them perplexed. Her section was dissolving into chaos. Word on the class forum was that students were organizing around bright TAs, or defecting to other sections where the instructors were teaching faculty who actually cared. Apu was heading towards a poor teaching review for a flagship course, and she knew it.

On a whim, Apu called her parents in the middle of a weekday. She told her father about her promotion to full professor, but he was unimpressed. He appeared to think it was only a matter of time, the way one might move on from deputy to branch manager at a regional government bank. Apu grew annoyed at him because of his lack of understanding, and because in her case he was right. She asked for her mother.

“You’ve not been feeling well,” was the first thing her mother said, “I was wondering when you would call.”

“How did you know,” Apu said, surprised by the telepathic statement.

“I may not know calculus, but I know my children.”

Apu began calling her mother more often.

* * *

Like Apu, Ian had also received tenure in computer science. He and his partner Kate had held a celebration. Apu had turned down their invitation, not wanting to interact with their friends, and afraid of running into Ben. But Ian and Apu's trajectories, long in sync, were finally about to diverge. He had dropped that he was moving states to join another university. Since hearing the news, Apu had been mentally distancing herself from Ian, letting their friendship cool off even before his departure. Ian had cornered her in a hallway.

"We should catch up. Come over sometime."

"How about a walk around campus?"

"Apu, we're leaving at the end of the summer. In a month, Kate and I will be gone."

Apu agreed to a weekend lunch. When she got to their apartment, she thought of her previous visit. Ian's place had looked just as bare. Back then, when they had just moved in, they hadn't unpacked. Now there was no need to.

"We missed you at the party," Kate assailed Apu with her usual warmth.

"She didn't want to visit us either," Ian said, ladling large servings of chili into bowls.

"Why," Kate looked affronted.

"Apu doesn't believe in goodbyes." Ian laid the bowls down on a small plastic table. "I learned that at the end of our PhDs, when we met for pizza, down the road at Palermo's. I can tell she doesn't remember this incident. We were on the sidewalk afterwards, and she says a quick bye and walks away. I'm left there thinking, this could be the last time we see each other,

is she going to turn around and wave at me? But my hope was no match for Apu's famed focus. She just kept on walking. I finished saying goodbye to her in my mind. I told myself, if this is going to be the parting memory my good friend leaves me with, so be it. Of course, we both returned as faculty, but we didn't know that at the time."

"I'm so nervous about the move, it's all happening quickly," Kate said. "We both have family where we're going, so I know there will be support. But we have our whole lives here." Ian went over behind her, massaging her neck. "All our friends. Apu, I've known you for nearly as long as Ian. You're practically our neighbor, and now I don't know when I'll see you next," Kate's voice grew heavy. "You academics travel all over for conferences. You should visit us."

"Yeah Apu, don't be a stranger. Come see us."

The unexpected strength of Kate's emotion broke through Apu's defenses, and her eyes welled up as well. "I will," she said, and Kate held her hand. Having some chili helped Apu warm up. "When did you decide," she asked Ian.

"I know it it looks like the classic post-tenure jump. But I hadn't been plotting it, honest. I only started thinking about it, what, a few months ago?" Ian looked at Kate and she nodded back. "I asked the department for more space, and got shown the middle finger. Then there's the politics around research boundaries. 'You stay in wireless networks, leave that to ubiquitous computing'. Hill Building has grown crowded, in rooms and egos."

"There was also the endowment," Kate added.

“That’s right, I’m tired of fighting to raise money. I’m ready to join a university with that sweet generational endowment,” Ian breathed in something fragrant, “A place where all my students are on scholarships.”

“That’s us. What about you, how have you been,” Kate asked of Apu.

“With you gone, I won’t have many friends. I looked forward to all of us growing old together. I thought we were lifers in this city.”

“Oh Apu, if the move doesn’t go well, we will turn around and come right back, I promise.”

“I know you’ve been having a difficult phase, but it will end,” Ian said. “You will bounce back.” Apu looked at him. She was this close to telling them about Ben.

“I’m not sure I can. I’ve been thinking about my success, and increasingly my failures. I think I can trace them back to one one thing,” Apu held up a finger. “A single moment of inspiration during my PhD. Everything after has been working out the consequences of that breakthrough. I’ve only ever had one achievement, and I’ve made an idol of it, something nothing else can compare to.”

“That is an extreme view,” Ian said.

“I have no robustness, to use a favorite term from my own research. I can’t nurture a lab, or offer anything of practical value, like you do.”

“Have you considered taking a sabbatical? Our terms of tenure specify a pretty generous one. Take a long vacation. Or do something completely different, that’s what it’s meant for. Like a stint at a company, raking in money.”

“It will be the industry internship I never had,” Apu smiled, “because I

was so caught up with writing papers. I have been approached by companies in the past, but I shooed them away in my haughtiness.”

“They will still want you. It will be something new, but isn’t that what we do all the time, placing bets on our research?”

“That’s not my style. I hate risk. I fret till I stumble upon something which works, run with it as hard as I can, then seek to disengage and float in glory. I’m freaked out by industry, I can’t do it.”

“You’re the genius of our graduating class,” Ian laughed, “How did you accomplish anything in the past? By trying. You’re being a child now.”

“I wish I were a child again. I need a second adolescence, another fundamental increase in potential, a second opportunity to rewire my brain.”

“If only. Until then, the best we can do is to keep learning.”

“I’ll miss you guys,” Apu said.

“And yet you were planning on ignoring me and avoiding a goodbye. Look at her Kate!” Ian pointed at Apu, “she’s thinking, ‘How can these people read me so easily?’ It’s because you’re not some mystery island Apu, you’re one of us.”

* * *

Soon after meeting Ravi, Ben made the drive to his parents’ home for the annual family summer gathering. As he parked outside, he saw his sister notice his arrival from a window.

“How are you,” Hannah came out and gave him a hug.

“I’m alright.”

She didn't look convinced. "I wanted to check on you before you came in. Rachel's already here, holding court in the living room."

"That may have figured into my decision to get here at leisure," Ben said. Hannah relaxed somewhat, and they went in.

"There's Ben!" their aunt Rachel said from the corner of an L-sofa she had occupied. "What was keeping you, the drive isn't so long."

"Research." Ben offered the lie as a sacrifice to the fire of judgment that burnt within Rachel.

"I knew it," she crackled, "I told you your son must be busy," she said to their dad, who briefly appeared to say hello before returning to work on dinner.

Rachel slapped the couch and Ben sat next to her, putting his feet up. "Busy Ben, changing the world with your research," she baited.

"Nothing of the sort."

"Well if you don't have anything interesting to talk about, I'll continue with my story. I was telling Hannah how I had to straighten out an editor at the newspaper I work for. He's some tech enthusiast who was hired to increase our digital footprint, don't ask me why. Don't you work with computers?" she backslapped Ben's shoulder.

"Not really, I'm still a materials engineer."

"You should, it's the future." Ben and Hannah exchanged glances. It was an old habit of their aunt to set up arguments so she could have it both ways. As children they often made the mistake of falling in her traps, but as adults they were happy to let Rachel win. It was the path of least resistance.

“We were driving when I told him that he wasn’t performing well and should expect to get fired. He must not have been used to be people being direct with him. Boo hoo! He started crying, a grown man with children. Boo hoo, someone fetch him a car seat.”

“Nice,” Ben said and got up, “I’m going to say hi to mom.” He could feel Rachel’s eyes on him as he left. He found his mom in the kitchen, cleaning up after dad’s cooking, and starting helping out.

“You are only as good as your last achievement Hannah. And you have to make intellectual connections to be successful,” Ben could still hear Rachel in the living room. “How do you take structures you’ve learned in one area and apply them elsewhere.” He was wiping a plate clean with a towel, and felt like smashing it on his head.

“I’m going to use the bathroom,” Ben said.

“Dad’s in there,” his mom observed, “go in the basement.” Ben silently thanked her for allowing him the respite from Rachel’s sphere of influence.

The basement was where Hannah and Ben had spent many hours of their childhood. It was where their rooms were, and where they still slept when they came home. Ben walked over to his old bed and lay down on the fresh, unlined sheets that his parents carefully maintained.

He had been working on repairing his relationship with sleep, and had resumed exercise. Ben was getting better, which began with him admitting that he was finally ready for change. Something involuntary in him then clicked and worked to raise his spirit. Once Ben noticed it, he threw in the efforts of his conscious will. The process was incremental. To onlookers, he would appear collapsed, but he was slowly pulling himself up by his

bootstraps. He still needed a quiet clearing in which to grow, not the rattling noise of Rachel's voice.

Ben scanned some toys that were arranged on a dresser. A school bus, a green dinosaur, a snarling lego pirate with a raised cutlass. Was he after the same treasure that haunted Apu's memories? As Ben built himself back up, he tried not to include any of Apu in his constitution. When Ben thought of her, it was often with resentment. He did not want to hold on to that feeling, and so had let go of her flaws and contradictions, all in her that he blamed. But once that was done, the Apu that remained with him was featureless. Even her appearance seemed to be eroding from his memory. When he called up her face, her eyes seemed blurry. He would think he could catch the sharp line of her lips, but by the time he scrutinized them, they would lose resolution.

A narrow window near the ceiling of Ben's basement bedroom looked out on their backyard. In the last evening light, Ben could see the thin stalk of a weed sprouting from concrete. He thought of the time he lay with Apu, and she had showered her love on a maple tree they could see from her bed. Perhaps, if he was looking for one aspect of Apu to retain, it would be that image. For if this little plant outside his window had a place in the world, so did he.

"Hey Ben, dinner's ready." His dad was at the threshold of his room, dialing up a lamp. "Are you awake?"

"Yeah," Ben sprung out of bed, "How long has it been?"

"A half hour, give or take. Do you need some time?"

"Nah I'm good, I'm pretty rested. Let's go."

Everyone else was already at the dinner table. Rachel was still talking. “I’m at a stage in my career where I can take it easy. No new tricks for this pony. I work at thirty percent capacity.”

“You deserve it,” Hannah said.

“My PhD wasn’t easy. A thesis in the humanities is expected to be a literal book, not a bunch of stapled reports like you people in engineering get away with,” Rachel said. Ben rolled his eyes at Hannah as he sat down. They had heard the saga of Rachel’s struggle many times before. “My guide was a tyrant. At the end of my first year, he told me to formulate a thesis topic. Of course what I came up with was stupid. When I presented it to him, he held his thumb out, like Caesar, and then turned it down dramatically. I was broken down intellectually, sent back to the drawing board. But with each iteration of his test, I improved exponentially,” Rachel looked sideways at Ben, “like the supposed progress of technology. Four attempts, and I finally got the thumbs up. ‘Now get to work,’ he said. Even now, when I tell people my advisor was Roberts, a look of fear passes over their eyes. Fear, followed by respect, that I was his student.”

“A PhD is supposed to be challenging. You may not get to use your thesis,” Rachel looked down, modest for a moment, “but it builds character, and character has value. My brother made the mistake of dropping out,” she motioned to their dad. “But he had the good sense of marrying your mother, who finished her thesis on time, with two infants in tow I might add.”

“Just one,” their mom said, “we had Ben after I graduated.”

“Which brings us to Ben. You didn’t think I’d forget just because you

ran away earlier, did you,” Rachel wagged a finger at him, “I have you in my sights.” Ben laughed at her in return, and kept laughing at how ridiculous he found the conversation, till Hannah looked at him like he was starting to be rude.

“What is your plan for graduation,” Rachel pressed on. Ben was silent for a minute, during which he could see Hannah worry on his behalf, getting ready to come to his defense.

“I propose next month,” Ben said calmly. “It’s a small, well-defined project my advisor and I have been working on since the start. I will defend in less than a year.”

“What comes next? I remember you saying you were interested in being faculty.”

Ben cursed the openly ambitious self he was in the past. “That ship has sailed. At this stage, I’ll be more useful contributing to industry.”

“That transition is not going to be easy. Who will hire you?”

“I don’t know yet. I’m keeping a buffer of six months after I graduate,” Ben said, adding before Rachel could object, “I’ve already spoken to a few professors who can support me with a short-term postdoc.”

Rachel evaluated Ben. “It’s not the outcome you dreamed of,” she pronounced, “but I like that you have a clear plan. Good luck,” she said, giving him the thumbs-up.

The next morning, Hannah and Ben took a walk along the wooded bike trail that was close to their home.

“Was it true, what you said to Rachel over dinner?” Hannah asked.

“Not quite, I made up the plan as I went along in order to end her

interrogation. But it's not false either. It's based on good guesses, grounded in possibilities which I think will work out. Because, forget Rachel, I needed a way out of the ultimatum my advisor gave me to propose this summer."

"When did that happen?"

"Around the time of the break-up," Ben thought, "it may have been a factor."

"Tell me more. You say you are alright now, but I'm not sure."

"I will Hannah, one day I'll call you and tell you all about it. But right now, I'm exhausted, and I'm asking you to trust me when I say that I'll be fine."

"You haven't told mom and dad have you, about any of this?"

"No, and I can't now, not when so much has happened. Where would I begin? One omission led to another, until I had built a tower of silence. Still better than a house of lies. Maybe mom and dad, and even you, will never need to know. Because I'm fixing myself, and when I am done, all you will see is that I survived."

* * *

Apu received a message from Ben saying that he wanted to meet one last time. He was unhappy with how abruptly their last conversation had ended, and wanted to talk things over. Ben suggested lunch at a Thai place. Apu remembered that it was a restaurant they both had been excited about, but never got around to trying. She looked up the directions. It was a direct bus ride for her, convenient but also distant enough from Hill Building that

she wouldn't have to worry about being seen. It was location Apu was more likely to say yes to, and she suspected that Ben knew that.

The restaurant turned out to be a hole in the side wall of a drab building that was on a nondescript street. Ben was already there, holding the front door to the restaurant open for her. He gave her a short, superficial smile that evaporated before she could react. There were only two tables inside, both vacant.

"For here?" The man behind the counter was surprised, as if not expecting patrons at this hour. "Okay, sit down, anywhere," he waved two plastic menu cards at them, then went into the kitchen behind the counter. From his casual clothing and the way he barked orders in another tongue, Apu thought that he must be the owner.

Apu and Ben sat in silence looking their menus. She was glad she did not have to keep up the act of reading for much longer, for the owner was back soon.

"Okay, ready to order?"

"Item eleven," Apu pointed at her menu.

"Green curry lunch special, okay. You sir?"

"I'll have a plate of spring rolls."

"Spring rolls, what else?"

"That's all," Ben said, handing over his menu to the owner.

"That's all?" the owner looked confused, but Ben stared him down till he muttered and returned to the kitchen. He was pissed off, Apu thought, judging by the increased anger they now heard in his voice.

"I'm not that hungry," Ben said. "I was at my parents' place the past

few days. There was a lot of food. I just drove back this morning.” Ben was looking straight at her, sullen.

“That sounds nice,” Apu looked down at the menu she had held on to.

“How has your summer been,” Ben asked flatly.

“Good. I’m teaching a course. I have a class this afternoon. Actually, I need to get going in about thirty minutes.”

“Makes sense,” Ben said with a frown.

For a place with no visible customers, the restaurant had quick turnaround. Their food was out soon, and so was the check, placed in a fish-shaped tray with turquoise scales that the owner thrust at them. Ben threw his credit card down almost immediately. Apu saw him chew off half a spring roll, grimace, and drop the rest. “This is a wad of oil.”

Apu’s own green curry was served in a plastic box. It was lukewarm, and steam had condensed on the underside of the lid. The vegetables floating within looked like they were on life support, and Apu’s appetite was murdered as well. Across from her, Ben’s brows were knit, and there was a determined, tense look about him. She couldn’t stand the silence, and they ended up speaking at the same time.

“When we last met,” Ben started.

“Whatever you have to say, say it,” Apu said, without malice. Ben paused and flinched, as if she had taken the edge off his strike by anticipating it.

“You didn’t treat me well.”

“I agree. I’m sorry.” Apu knew her mistakes well enough, and felt like she had to face Ben to atone. But now that he had begun to speak,

she didn't want to hear him, and wasn't sure she should have come. Her extremities felt frigid, and she dropped the plastic fork that danced in her fingertips.

"What I needed was your help," Ben softened as he looked at her. "Not that I would demand it, that's not what I was in it for," he trailed off. He now looked vexed with himself, as if the words of a speech he had practiced and perfected didn't fit the moment. "It seems selfish, but I wanted you to hear my thoughts," he closed.

"I understand."

The front door chimed from being swung open. A delivery driver entered and picked up large bags of takeout. That must be most of the restaurant's business, Apu realized. The owner appeared again, scowling at the two of them.

"We should go," Ben rose. Apu walked with him to a parking lot at the rear of the building. "I still need to drop off my rental car. Would you like a ride back to school," he offered, then closed his eyes and shook his head, as if accepting her refusal even before she had said no. "I'm sorry if this was a waste of your time. But maybe what I said will be useful to you, in a future relationship. If you have one," he said with a shrug.

Apu would later try to remember his exact words, in an attempt to separate what was justified censure from what was simply mean. Ben had been severe in a way she did not expect. But what she would recall even more starkly was how Ben had then stepped close to her. Time seemed to slow down and she noticed, as if with eyes behind her head, how desolate the parking lot was. Ben moved his face towards hers, and she remembered

how, with a programmed fear, she ducked, and pushed two fists into his chest. Ben retracted, leaving Apu with eyes wide open in mute alarm, her mouth shut and dry.

She felt his fingers firmly holding her shoulder, but he did not move in again. From the corner of her eyes, for she did not dare to look straight at him, she saw Ben smile, either in friendly goodbye, or another display of viciousness. He patted her shoulder a few times, then got into his car, and drove away.

Apu could not remember, but she must have taken the bus back to campus. She did not know how long she had functioned in that daze, but she did remember that she emerged from it, and it did not last. In giving vent to his feelings, it was true that Ben had been right about many things, and it was also true that he had lashed about with aching power. Perhaps he had the heart of a beast, or perhaps he had yet to learn to be a better man.

* * *

When the new fall semester began, Apu was not on campus to welcome it. Instead, she was at the international departures terminal of the airport. Ian had packed up and left, and Apu had taken his parting advice and initiated her sabbatical. The first thing she had done was to get tickets to India to visit her parents. She checked her documents one last time in the waiting area, making sure she was not living her nightmare of attempting to fly without the right paperwork.

Apu's preferred strategy of surviving long flights was to tire herself out by working or reading till she fell asleep. During the interminable boarding, she realized that it would not work this time. For one, she was racked by a bad headache which sent forking pain down the grooves of her brain. Worse, she was hemmed into a window seat by a young family with a baby.

"His first international trip, so sorry," the mother apologized to Apu for any inconvenience with a wave of her head.

Apu closed her eyes and rested her forehead against the display screen in front of her. She tried to block out the combined whimpering of the many infants that could be found in every row of a flight to India. It was of no use. The takeoff was turbulent, and caused the children to harmonize in a symphony of full-blown wails. The harder she tried to shut them out, the more her head hammered.

So Apu gave up, and tried the opposite. She opened her eyes and looked at the frenzy of the family next to her. She put up the armrest to give the mother more space, and with arms held out to hold the crying baby, offered to help.

Bio

NOTE: I am currently on leave as Chief Scientist at a stealth startup. We aim to revolutionize healthcare with AI that is safe, accurate, and explainable. We are on the lookout for smart, motivated individuals. Please reach out if interested!

Apurva (Apu) Sharma is a Professor in Computer Science. Her research interests include theoretical machine learning, statistics, and information theory. Her PhD thesis contributed to the foundations of distributed learning and received an Honorable Mention for the ACM Doctoral Dissertation Award. Her work has won multiple best paper awards. She has been supported by a Sloan fellowship, an NSF CAREER award, and several industry faculty grants. She regularly serves on program committees for conferences and on editorial boards for publications.