Rushi Shah

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Education

May 2020 — **University of Texas - Austin**, *Turing Scholar Honors Program.*
B.S. Computer Science & B.S. Mathematics. **GPA: 3.8**

May 2016 — **Thomas Jefferson High School for Science and Technology (TJHSST)**.

Work Experience

2019 — **UT Program Analysis Research Group**, *Research Assistant*, Austin.
- Presented paper called *"Synthesizing Database Programs for Schema Refactoring"* (third author) at top-tier Programming Languages Design and Implementation 2019 conference
- Implemented research prototype tool in Java programming language for forthcoming top-tier conference submission called *"Data Migration using Datalog Program Synthesis"* (second author)

2019 — **CS 389L Automated Logical Reasoning (graduate level class)**, *Teaching Assistant.*
- Served as Teaching Assistant for 60 Master's and Ph.D. students; graded weekly proof-based homeworks; held well-attended weekly office hours; helped grade midterm and final exam

2018 — **Amazon**, *Software Engineering Intern*, Tokyo, Japan.
- Elegantly reduced the task of tracking real-time, location-based purchase trends in Amazon order data to leverage an edge-detection algorithm (a well-researched, traditional machine vision technique)
- Implemented a service based on above approach using the Java programming language, the Python programming language, the OpenCV library, and Amazon Web Services tools like S3 and EC2

2017 — **Originate**, *Software Engineering Intern*, New York City.
- Worked at this software consulting firm in Manhattan on a data center workload analysis contract
- Generalized and patched distributed computing scripts by coding in the Scala programming language with the Spark framework over Cassandra databases

2014-2015 — **MITRE Corporation**, *Research Assistant*, Washington DC.
- Worked for the Federal Aviation Administration (FAA) at this federally-funded R&D center to improve the Closed Runway Operations Prevention Device (CROPD) which prevents plane crashes
- Adapted computational linguistics algorithms to call-sign identification task in over 25,000 transmissions; edited strict language model based on air traffic controller's emerging speech patterns

Publications

2020 — **Data Migration using Datalog Program Synthesis**, Yuepeng Wang, <u>Rushi Shah</u>, Abby Criswell, Rong Pan, Isil Dillig, *In Submission.*

2019 — **Synthesizing Database Programs for Schema Refactoring**, Yuepeng Wang, James Dong, <u>Rushi Shah</u>, Isil Dillig, *Programming Languages Design & Implementation 2019.*

Other Experience

2018 — **Speaker**, *Math Directed Reading Program*, "Gerrymandering Considered Harmful".
Presented research survey relating to numeric methods for computing the unfairness of a given election district, along with the relevant policy considerations at local, state, and federal level

2018 — **Moderator**, *Tech & Politics Speaker Series*, Prof. Hovav Shacham on Election Security.
Moderated conversation with Prof. Shacham on his hacking of airport metal detectors, car computers, & California's election systems, along with the policy implications of his research

2018,2019 **Discussion Leader**, *Annette Strauss Institute For Civic Life*, Great Conversations Gala.
Designated to lead discussion on the technology table at annual charity gala for The Annette Strauss Institute For Civic Life; guided conversations about evolving role of technology in civic engagement

2017-2018 **Communications Officer**, *Information Systems & Security Society (ISSS)*.
Coordinated weekly messaging for UT's largest Computer Science organization to inform >300 members about Computer Security events like speaker panels and Capture the Flag (CTF) competitions

▬ Service

2017-2019 **TX Votes (non-partisan civic engagement)**, *STEM Committee Chair*, 10-12 hrs/wk.
- Threw voter registration drive in Computer Science building; one student registered for every three minutes spent tabling
- Co-hosted four *Tech & Politics Speaker Series* events with Austin Tech Alliance; invited speakers include Professor Hovav Shacham (Computer Security expert who spoke on integrity of voting systems) and Mark Strama (head of Google Fiber West who spoke on tech lobbying efforts)
- Trained as Volunteer Deputy Registrar (VDR) and personally registered over 250 voters

2019 **Physics/Math/Astronomy Board for Student Advocacy (PMA BSA)**, 1-2 hrs/wk.
- Strengthened math major community by increasing communication and relationships between the following niche organizations: the UT (Pure) Math Club, the Society for Industrial & Applied Mathematicians, the Actuarial Science Club, and the Science Teachers of Tomorrow

2017-2018 **Seva Charities**, 1-3 hrs/wk.
- Fundraising efforts go towards mid-day meals at schools for low/no-income students in India
- Went viral on Snapchat for juggling potatoes at Seva Week fundraiser
- Active participant in local park cleanup, food bank volunteering, & annual charity gala

2017-2019 **Big/Little Endian Turing Mentoring**, <1 hr/wk.
- Formally (Big/Little Endian program) and informally mentor underclassmen/prospective Turing Scholars with guidance on getting involved in research, recruiting, and best/worst campus activities

▬ Activities

2018-2019 **UT Saaya Competitive Bollywood Fusion Dance Team**, 17-26 hrs/wk.
Danced in South Indian, Bollywood, & Bhangra segments of nationally competitive performance

2017-2019 **Longhorn Salsa Dance Club**, 1-3 hrs/wk.

2017-2018 **UT Rock Climbing Competitive Team**, 10-11 hrs/wk.

2016-2017 **UT Rock Climbing Club**, 2-3 hrs/wk.

▬ Awards & Honors

2019 **Undergraduate Research Fellow**, *UT Office Undergraduate Research*.

2019 **VDR 100 Club Award**, *Travis County Tax Office*, for registering 168 voters in one cycle.

2019-2020 **Eva Stevenson Woods Scholarship**, *UT Unrestricted Endowed Presidential Scholarship*.

2016-2017 **Gregg & Mariko Zeitlin Scholarship**, *UT Unrestricted Endowed Presidential Scholarship*.

▬ Selected Coursework

Computer Science.
CS 439(H): Operating Systems (Honors); *CS 389 L*: Automated Logical Reasoning (Graduate); *CS 380 S*: Computer Security (Graduate); *CS 395 T*: Cybersecurity Law & Policy (Graduate)

Mathematics.
M 365 C: Real Analysis I; *M 373 K*: Abstract Algebra I; *M 367 K & L*: Topology I & Topology II