408-839-3846
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Pranav Kumar

Website
GitHub
LinkedIn

Education

Incoming Masters Student in Computer Science Fall 2024
BS in Math and Computer Science - 3.95/4.0, *University of Illinois - Urbana Champaign* August 2021 - May 2024
Double BS in Math and Computer Science - 4.0/4.0, *University of Wisconsin - Madison* August 2020 - May 2021

Skills

Tools and Languages C, C++, JAVA, Android, Python, PyTorch, NumPy, Matplotlib, Git, LaTeX, JavaScript, Node.js, AWS, HTML/CSS, Angular, SQL, REST API, Tensorboard, OCaml
Communication English (native), Tamil (native), Spanish (conversational)
Relevant Coursework Machine Learning, Deep Generative & Dynamical Models†, Statistical Reinforcement Learning†, Algorithms & Models of Computation, Algorithms, Computer Architecture, Compilers, System Programming, Data Structures, Discrete Math, Optimization, Numerical Analysis, Linear Algebra, Probability & Statistics, Abstract Algebra, Real Analysis

† taken at a graduate level

Recent Work Experience

Undergraduate Researcher **June 2022 — February 2024**
Coordinated Science Lab @ UIUC *Urbana, IL*

Researched Machine Learning for Robot Path Planning, Machine Learning for robot object manipulation.

- Worked on Deep Neural Networks (Convolutional Neural Networks, Transformers, LSTM, Framestack) for learning policies for robot path planning under Dr. Saurabh Gupta.
- Training policies to achieve better generalization on object manipulation tasks like pushing & stacking with robot arm under Dr. Saurabh Gupta.
- Involved iterating on policies, testing them on real robot & understanding dataset and model behavior through visualizations.
- Helped train and evaluate diffusion models for project.
- https://arxiv.org/abs/2402.17768

Software Development Engineering Intern **June — August 2023**
Amazon *Sunnyvale, CA*

Worked on Automation Pipeline for device testing.

- Created PyTest automation pipeline for testing unreleased FireTV device
- Got low level device functions like text entry or button pressing on device working from test environment
- Pipeline helped team meet product release deadline
- Wrote script to automatically update internal webpages based on test results
- Saves developers hours of time as previously this task was done manually

Software Engineering Intern **June — August 2022**
AT&T *San Ramon, CA*

Worked on Full Stack Development.

- Developed a dynamic website using Django and Angular that hosted different internal documents/links. Website automatically accepts new data and updates through API POST requests.
- This project improved the team's workflow by reducing the number of meetings/discussions over where to find different information.
- Created backend for internal survey application in Django. Allow users to enter and edit information, log entries and edits.

Software Engineering Intern **May — August 2021**
Thomson Reuters *Eagan, MN*

Worked on internal APIs.

- Developed a program using NodeJS that converts over 492 Apigee proxies into OpenAPI Documents which are then stored in a S3 Bucket where they are used for data processing to help build out a companywide API dashboard using CloudFront logging data
- This project resulted in an increase of 4.5 million daily matches of CloudFront logs to their associated API

- Added functionality to an internal API that manages the API Delivery Network at Thomson Reuters which allowed teams to add auth@edge to the cloudfront distributions that sit in front of their APIs
- Developed a new endpoint that allowed developers to secure their API traffic from a single CloudFront distribution by sending a custom header with a secret value that the development team verifies on all incoming traffic

Service

ACM Peer Mentor **October 2023 — Present**
ACM @ UIUC *Urbana, IL*

Mentoring two students

- Currently mentoring two freshman
- Provide advice on course planning, internships, research to help them achieve future goals

BadgerHacks Hackathon Co-Founder/Organizer **January — March 2021**
BadgerHacks @ UW-Madison *Madison, WI*

Organized Hackathon

- 125 participants from all over the world, 35 project submissions, 5 prizes awarded
- Secured sponsorships, advertised for hackathon & judged submissions (also coordinated with industry professionals for them to judge)
- Hackathon link: https://badgerhacks.github.io
- Featured in article: https://www.cs.wisc.edu/2021/03/02/badgerhacks/

Certifications

Neural Networks and Deep Learning (Coursera) January 2022

Hobbies

Badminton, Swimming, Gaming, Public Speaking, Cooking