Pranav Shankar Bijapur

pranavsb@cmu.edu • github.com/pranavsb • pranavsb.me

Education

CARNEGIE MELLON UNIVERSITY, Pittsburgh, PA   Expected: December 2022
Master of Science in Electrical and Computer Engineering - Advanced Applied Track   *GPA: 3.67/4*
Coursework: 15746 - Storage Systems, 15213 - Intro. Systems, 18661 - Intro. ML

BMS COLLEGE OF ENGINEERING, Bangalore, India   May 2018
Bachelor of Engineering in Electronics and Communication   *GPA: 8.87/10*
Activities: IEEE, Melton Fellow, IoT Lab, Siemens Hackathon

Experience

BELTECH.AI, Hubli, India
Machine Learning Engineer   November 2020 – May 2021
- Primary engineer on Traffic Signal Optimisation - created RL agent and backend to reduce average vehicle stop time at a 4-way intersection in an Indian city by 17% over CV based heuristics approach
- Extracted microservice and restructured backend architecture to guarantee valid traffic light states at software level and achieved 0 intermediate invalid traffic light time due to network failures down from previous average of 20 mins/day/intersection
- Designed and implemented software interfaces for hardware vendor team on Raspberry Pi; setup healthcheck and alerting systems
- <u>Keywords</u>: Python, Flask API, Redis, SUMO, AWS EC2, RabbitMQ

SABRE TRAVEL TECHNOLOGIES, Bangalore, India
Associate Software Engineer   August 2018 – November 2020
- Hotel related functionality of GetThere corporate travel management platform
- Devised multi-criteria hotel preference sorting; enhancements to policy engine for airfare ranking
- Implemented XML CRS (computer reservation system) simulator to automate testing of the legacy system to shop, price and book flights, hotels and rental cars
- Added features to internal automation framework built on Selenium; wrote performance test scripts
- Enhanced Uber's Piranha to auto-delete 7000+ lines of stale code in 1M line Java monolith; created SOP and trained engineers to deep-clean stale code associated with 65+ stale feature flags
- <u>Keywords</u>: Java, TDD, JUnit, GDS, XML, Jenkins, Maven, JMeter, Git, jQuery

Selected Projects

MELTON APP AND DASHBOARD   August 2020 – November 2020
- Led a team of 5 developers on $5K budget to develop Android & iOS mobile app and web dashboard
- Spearheaded frontend in Flutter/Dart; app released on Play Store and App Store with 200+ downloads
- Formulated overall product and backend APIs; implemented dashboard features in Django
- <u>Keywords</u>: Google Maps API, OAuth, Flutter/Dart, Django, Docker, AWS S3, GitHub Actions

UBER PIRANHA - AUTO-DELETE STALE CODE   May 2020 – June 2020
- Implemented a major enhancement to Piranha Java to delete stale code based on calling class, return type, argument index
- Ported legacy .properties to flexible, extensible JSON config; suggested approach for auto-deletion of unit-tests without multi-pass analysis
- <u>Keywords</u>: Java, Google ErrorProne, static analysis, Abstract Syntax Tree, Gradle

REINFORCEMENT LEARNING IN THE SMART GRID   January 2018 – July 2018
- Created a general mathematical model of a Smart Grid environment – with multiple Sources and Loads
- RL Battery Agent to optimize parameters such as cost, battery reserve backup and battery longevity – in a dynamic electricity pricing scenario; multiple competing Battery Agents and their effect on the grid
- <u>Keywords</u>: Q-Learning, Smart Grid, NumPy

Leadership and Activities

IEEE BMS, Bangalore
Secretary, Student Executive Committee   August 2016 – August 2017
- Responsible for organizing technical talks, workshops and events with 100+ people
- Led semester-long Python SIG class for 60 students with assignments and exams
- Expanded SIG initiative to AVR microcontrollers, Python and Aerospace; got international IEEE Darrel Chong award; loaned Pi and Arduino kits based on project proposals

THE MELTON FOUNDATION
Junior Fellow, Campus Outreach Fellow   May 2016 – September 2019
- The Melton Foundation is a network of partner universities in 6 countries that provide Fellowships for social change. https://meltonfoundation.org/
- Worked in cross-cultural, cross-functional teams on mental health – interview and prototype solutions
- Handled social media accounts and exchanged best practices with other Outreach Fellows
- Co-organized 10-day Global Citizenship Conference in Bangalore with 250+ delegates from 6 countries

Papers

- **Reinforcement Learning for energy storage optimization in the Smart Grid**. 2020 IEEE International Conference on Power Electronics, Smart Grid and Renewable Energy (PESGRE 2020)
- **Estimation of rooftop solar energy generation using Satellite Image Segmentation**. 2019 IEEE 9th International Conference on Advanced Computing (IACC)