Rahul Roy Mattam

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Education

- **University of Arizona** — Tucson, AZ
  Pursuing Master of Science in Computer Science — ***Aug. 2018 – May. 2020***
- **Cochin University of Science and Technology** — Cochin, India
  Bachelor of Technology in Computer Science; GPA: 3.4 (74.86/100.0) — *Sept. 2011 – March. 2015*

Skills

- C#, Python, SQL, Golang, Java, Javascript, HTML, Heroku, Elastic Search, Redis, AngularJS, Node.js

Experience

- **University of Arizona** — Tucson, AZ
  Graduate Research Assistant — *Aug 2018 - Present*
  - **Fake Science Classifier**: Researching ELMo LSTM neural networks in the PyTorch Framework to classify fake science articles using Python.
- **FactSet Research Systems Inc** — Hyderabad, India
  Software Engineer — *Jun 2015 - July 2018*
  - **Distributed Cache Service**: Developed an API written in Golang and hosted on Heroku, which reduced the latency of client apps by 95%, provided 10 times more cache space and saved $48,000 per year in Redis Enterprise license costs by load balancing and distributing objects cached across free Redis slave instances.
  - **Equation Automation with Elastic Search**: Improved automated collection of financial expressions by 65% from company earnings reports by indexing arithmetic expression patterns in Elastic Search and comparing context similarity with historically processed company earnings reports having similar arithmetic expressions.
  - **Data Validation**: Developed a dynamically configurable rule-based financial data validation service in C# and WPF which helped to capture over 98% errors in data exported to clients.
  - **Workflow Microservices**: Refactored a monolithic C# Signal-R service to a Golang microservice architecture hosted on Heroku improving site reliability by 90%. The microservices managed user workflows using web-sockets and Redis channels for synchronizing real-time data across client connections.
  - **Equation Generation via Genetic Algorithm**: Built a C# service to find an arithmetic expression connecting a bag of values using a genetic algorithm reducing memory utilization by 66% because of faster convergence detection compared to backtracking. The Genetic algorithm allowed to abort after a reasonable number of failed attempts in the case of inconsistent inputs without a valid expression.
  - **Markov Decision Process**: Built a prediction service that utilized probabilities of code execution in a Markov decision process matrix to reduce latency by 10% and suggests user actions in the UI.
  - **Fast Feed Sync**: Developed a service that synchronized reference tables from a data feed in large batches reducing latency due to update failures by 97.5% with a divide and conquer recursive error handling strategy.
  - **Gopkg**: Hosted an in-house version of the gopkg.in service to work with internal Golang Git repositories.
  - **Jenkins CI**: Configured 40+ services that were deployed using batch scripts to take advantage of Jenkins CI.
  - **Perforce Deprecation**: Advocated Git for source control and migrated 80% of team-owned source code and version control history maintained in Perforce SVM to GitHub Enterprise using a git-p4 python script.
  - **Blue Ribbon Award**: Received a FactSet Blue Ribbon Award for exemplary performance in work.
- **Yoyo Aerospace** — Cochin, India
  Software Engineer Intern — *Summer 2014*
  - **Home Automation**: Developed an Android Application in Java that controlled an Arduino Microcontroller installed on target home automation devices via Bluetooth.

Projects

- **Cloud IDE for C**: Developed a Web App hosted as a Node.js instance for writing C programs with rich code editing features like Trie based Autocomplete, syntax highlighting and code search.
- **Indic Language support for Android**: Rendered Unicode characters as an image using the Script Renderer module of the SILPA Framework for legacy Android OS versions which lacked native Unicode support.