KUSH JAIN

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EDUCATION

Carnegie Mellon University	Doctor of Philosophy, Computer Science	May 2026
The University of Texas at Austin	Bachelor of Science, Computer Science (GPA: 3.93)	May 2021

PUBLICATIONS

Kush Jain, Karl Palmskog, Ahmet Celik, Emilio Jesus Gallego Arias, and Milos Gligoric: _mCoq: Mutation Analysis for Coq Verification Projects_. International Conference on Software Engineering, Tool Demonstrations Track (ICSE Demo 2020), Seoul, South Korea, May 2020.

EXPERIENCE

Amazon Lab126 – _Software Engineering Intern;_ Sunnyvale, California   June 2021 – August 2021
- Developed a webapp to manage the approval process for all prototype devices at Amazon, with ability to create events, email event attendees, and define conditions regarding who can attend various events
- Migrated existing data from spreadsheet to DynamoDB to develop fully functional solution
- Integrated unified authentication to manage user permissions and regulate who could perform certain actions

Amazon Lab126 – _Software Engineering Intern;_ Sunnyvale, California   June 2020 – August 2020
- Developed a device search service for prototype devices using AWS lambda, ElasticSearch, API gateway and Database Migration Service to serve over 9 million requests a month, while dramatically improving existing search functionality
- Generically flattened device records to ensure compatibility with ElasticSearch in a schema change tolerant way
- Leveraged federated authentication to ensure that users could only search devices they were authorized to view

VISA Inc. – _Software Engineering Intern;_ Austin, Texas   June 2019 – August 2019
- Developed a realtime monitoring solution to track health of core IT services using NodeJS, React and PowerShell. In the first two months of production, proactively detected five major outages, preventing over 250 support tickets
- Implemented a customized link shortener for VISA's internal network, using NodeJS, React and SQL. This was the first time everyone at VISA could send short memorable URLs
- One of two intern projects (out of over 50 projects) presented at a CIO all hands meeting

OpsHub Inc. – _Software Engineering Intern;_ Palo Alto, California   June 2018 – August 2018
- Prototyped an Angular dashboard to visualize multi-system KPI's using the company's integration platform
- Leveraged the company's GraphQL API to automatically create the endpoint systems, build the integrations, and dump all relevant data in local database
- POC was successful and company is looking to fully develop the product

OpsHub Inc. – _Software Engineering Intern;_ Palo Alto, California   June 2017 – August 2017
- Developed software to analyze the riskiness of a source code file and to predict the number of bugs expected
- Used machine learning libraries to test different types of models and optimize the accuracy of this feature
- Cleansed and prepared data sets for regression algorithms and machine learning
- Got 70% accuracy and had visibility to improve it further by bringing in data from additional systems

Paxata Inc., ZScaler Inc. – _Part Time Contractor;_ Bay Area, California   July 2015 – May 2017
- Significantly improved marketing's effectiveness by automating routine, manual processes
- Leveraged Selenium and Python scripting to automate various tasks such as collecting real time inventory status from reseller's website, potential partner information from competitor websites, etc.

RESEARCH

Undergraduate Research Assistant, Professor Milos Gligoric   August 2018 - Present
- Built machine-learning models that could analyze a series of git commits and predict the likelihood of a bug occurring
- Researched performance modeling in area of JIT compilation (which configurations of a compiler result in the fastest execution of test cases)
- Programmatically analyzed structure of Coq, a large-scale formal verification tool

PROJECTS

Volunteer Software Developer, Santa Maria Urban Ministry   May 2017 - Present

- Part of the team which digitized the agency's client recordkeeping system, with features to add services, generate required government reports and track client history
- Being actively used in production over last two years with regular quarterly updates

SKILLS

- Expert in Java and Python (including ML libraries: pandas, sklearn, numpy, pytorch)
- Proficient in Angular, CSS, HTML, Javascript, JQuery, Selenium, SQL, React, Ruby