Kajal Varma

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Education

- **Georgia Institute of Technology** — Atlanta, GA
  Master of Science in Computer Science (Computing Systems); GPA 4.0/4.0 — *Aug 2018 – Dec 2019*
  - **Courses**: Advanced Operating Systems, Computer Networks, Network Security, Big Data Systems, Intro to Information Security, Advanced Software Engineering, High Performance Computer Architecture, Graduate Algorithms, Data and Visual Analytics
- **Birla Institute of Technology and Science, Pilani** — Goa, India
  Bachelor of Engineering in Computer Science; GPA 8.64/10.0 — *Aug 2012 – May 2016*
  - **Courses**: Operating Systems, Computer Architecture, Data Storage Tech and Networks, Network Programming

Skills

- **Programming**: C++, C, Java, Python, bash, Objective-C
- **Tools and Technologies**: Amazon Web Services (AWS), Git, HTML/CSS, Linux, MacOS, Windows

Work Experience

- **Intuit**

  Software Engineer 2, *San Diego, CA* — *Jan 2020 – Present*

  Software Intern, *San Diego, CA* — *May 2019 – Aug 2019*
  - Working in the Site Reliability Engineering - Production Engineering team to run production load tests to ensure system availability. Implemented enhanced autoscaling policies to eliminate overscaling.
  - Implemented timezone based routing in Java to improve request times by up to 100 ms for TurboTax Online.
  - Implemented a scalable approach of mocking integration tests using Wiremock for 5 core backend services.

  Software Engineer 2, *Bangalore, India* — *Feb 2018 – Jul 2018*

  Software Engineer 1, *Bangalore, India* — *Aug 2016 – Jan 2018*
  - Implemented a technology stack built from scratch in C++ for the TurboTax Desktop (Windows/Mac) product.
  - Earned an Engineering Excellence Award for resilient rollout of the stack to half a million customers.

Projects

- **Energy Estimation of High-Performance Computing Applications**
  Research thesis on prediction of energy consumption of an NVIDIA CUDA kernel through static analysis of compiled PTX code and power modelling of benchmarks on an NVIDIA GPU. Paper published in ISPA 2018.
- **DTLB: Deterministic TLB for Tightly Bound Hard Real-Time Systems**
  Deterministic translation lookaside buffer (DTLB) and cache design and simulation for hard real-time systems, to eliminate inter-task interference and obtain dynamic energy savings. Paper published in IEEE VLSID 2017.
- **Analysis of Cache Replacement Policy using SESC Simulator**
  Implemented NXLRU (Next to Least Recently Used) cache replacement policy in the SuperESCalar Simulator.
- **PromotEd**
  Built a job role-focused course recommendation product which recommends courses from multiple online course providers. Used Python for machine learning algorithms, React, and shell scripts to collect data from MOOC APIs.
- **MapReduce Infrastructure using gRPC**
  Implemented a MapReduce simulation in C++ by using gRPC for communication in a distributed service.
- **vCPU Scheduler and Memory Coordinator for Virtual Machines**
  Implementation of a scheduler and memory coordinator to dynamically manage resources assigned to each guest OS running on a hypervisor in a virtualized setting in C.
- **Linux Kernel Mouse Device Driver Implementation**
  Implementation of a kernel device driver module in C to change the brightness of the screen through mouse clicks.

Honors and Achievements

- **Engineering Excellence Award**: Intuit, Apr 2018
- **Winner, Intuit HackUtsav 2017**: Intuit, Jul 2017