Navi Tansaraviput

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U.S. Permanent Resident (Green Card)

Software engineer with 9 years of experience, including 7 years in distributed systems, real-time data processing, and networking infrastructure, plus 2 years of industry and research work in ML and AI. Strong focus on reliability, scalability, and performance optimization.

Education

- **Massachusetts Institute of Technology** Cambridge, MA
  Bachelor of Science in Electrical Engineering and Computer Science *June 2015*

Experience

- **Google**, Software Engineer

  Google Pub/Sub is the internal messaging service that also serves as Cloud Pub/Sub backend. New York, NY, *May 2022 – Present*
  - Led critical infrastructure improvements for exactly-once delivery, eliminating message duplication for subscriptions with previous seek requests.
  - Led the in-transit data residency compliance initiative and regional endpoint service deployment to meet Personal Data Protection Law requirements, serving as the key cross-functional point of contact; designed the solution and a standardized framework, enabling new market segments while reducing future engineering effort by 75%.
  - Designed and implemented auto-sharding integration for subscriber statistics requests, achieving 5x improved request affinity and 60% memory reduction. Drove multiple improvements to backlog stats staleness detection and resolution.
  - Extended Checksum to Pub/Sub Storage, eliminating permanent data corruption. Resolved critical customer issues and improved data integrity.
  - Mentored STEP interns and guided technical implementations for Cloud Pub/Sub to BigQuery integration with BigQuery table schema and Avro logical types schema support.

  Marconi SPGW serves as the control plane functionality supporting data connections. Mountain View, CA, *Jan 2019 – May 2022*
  - Architected voice charging data records pipeline for single and multi-bear scenarios, achieving 50% storage optimization while maintaining regulatory compliance.
  - Designed real-time voice quality metrics system with dataplane sampling, improving issue detection and evaluation.
  - Led Icmpv6 service framework migration from asynchronous to synchronous architecture, improving observability and reducing customer issues by 20%.
  - Led operational improvements initiative: automated candidate anomaly detection, reducing 30% of weekly engineering effort, and designed experiment configuration management enabling rack-specific rollouts; created standardized procedures and knowledge-shared enabling platform-wide process improvements.

  Google Health Pathology (20% Project) Palo Alto, CA, *Jun – Aug 2020*
  - Integrated slim ResNet ML models into cancer diagnosis pipeline using Tensorflow, implementing end-to-end testing and performance benchmarking against ResNet implemented with Keras.

- **Groupon**, Software Development Engineer, *Fraud Detection* Palo Alto, CA, *Aug 2016 – Jan 2019*
  - Developed real-time fraud detection platform, reducing latency by 60% through request parallelization. Onboarded three additional fraud detection signals and implemented automated prediction system in Ruby on Rails.
  - Led the rearchitecture of order pending review caching system from polling to push-based, minimizing cache staleness and improving system performance.
  - Developed a full-stack web application to allow the operation team to review orders manually and interact with Orders service systems in Ruby on Rails and JS.

- **MIT EAPS Signals and Systems Group**, Research Assistant, *SLOOP* Cambridge, MA, *June 2015 – Aug 2016*
  - Developed image recognition algorithms for SLOOP, a crowd-sourced animal biometrics retrieval system

- **MIT CSAIL**, Undergraduate researcher, *Assistive Devices for Healthcare* Cambridge, MA, *Sep 2014 – June 2015*
  - Developed algorithm for non-invasive vital signs monitoring and breathing anomaly detection.

- **Oracle America, Inc.**, Software Engineering Intern, *Oracle Linux* Redwood Shores, CA, *June – Aug 2014*
  - Automated presubmit checks for kernel development version control

- **Akamai Technology, Inc.**, Engineering Intern, *Platform Operation* Cambridge, MA, *June – Aug 2012*
  - Built an analytic visualization web application to process and display log messages using HTML,CSS,JS with Python,PostgreSQL backend.

Skills & Activities

- **Languages**: C++20, Python3, Shell Scripting (bash, zsh), SQL, Ruby on Rails, Java, JavaScript/Typescript, HTML, CSS
- **Microsoft TEALS Program Instructor**, Millennium High School, New York, NY, *Sep 2024 – Present*: Teaching Introduction to Computer Science to a class of 23 high school students.