Nikhil Peri

Education

BASc. Electrical Engineering and BSc Computing Technology • Sept. 2014 — May 2019
University of Ottawa

Actively involved with the Centre for Entrepreneurship and Engineering Design working on various engineering projects, Most notably team captain of uOttawa Rocketry, an interdisciplinary engineering team competing in the international Spaceport America Cup.

- Dean's Honor List
- Nortel Networks Scholarship
- Control Systems Specialization

International Baccalaureate Diploma • 2010 — 2014
Michael Power St. Josephs

Specialized in History and Chemistry in this academically intensive and globally recognized program. Participated in student ventures such as Free The Children, and Duke of Edinburgh Award

- Completed 3 University Level Courses
- Core French Certificate
- 4 year Re-elected member of Student Council

Experience

Shopify

Data Engineer • May, 2018 — Sept, 2018

Worked on the Discovery Team responsible for delivering recommendations to customers of various Shopify products. Specifically focused on matching algorithms to help shop owners find contract professionals.

- Deployed an ensemble linear model to produce recommendations based on multiple positive and negative user behaviour signals
- Responsible for building modeled datasets from raw data using Apache Spark
- Developed a realtime microservice for querying trained Tensorflow Models with offline and online features
- Debugged and resolved data extraction issues used in our core batch processing pipelines

Backend Developer • Jan, 2017 — April, 2018

Worked on the Services Marketplace Team building a platform to broker agreements between Entrepreneurs and contract professionals. Built data pipelines focused on delivering recommendations to customers and A/B testing features.

- Built a real-time recommendation system leveraging Apache Kafka, reducing the delivery time of recommendations from hours to minutes
- Contributed to the open source Experiments Framework Verdict
- Developed applications using Linux, React, Rails, MySql stack
- Used operational tools such as ModeAnalytics, Splunk and Datadog to generate stakeholder reports
- Made it to the final round of internal company Hack Days

Microsemi
Software Engineer • May, 2016 — Sept, 2016

Worked alongside the Timing and Synchronization R&D Team developing Microsoft .NET applications to help customers and internal engineers configure embedded timing chips over FTDI.

- Designed algorithms used for configuring device registers and selecting frequency parameters, in fixed time complexity
- Programmed .NET applications in C# and .dll libraries in C++ both from scratch and on top of existing code
- Conducted validation of power consumption and signal quality on timing devices

- Read and produced circuit schematics and semiconductor datasheets

Projects

uOttawa Rocketry Team
Co-Founder & Design Lead • 2015 — Present

uOttawa's first aerospace and rocketry team. Built a rocket which utilized a dynamic braking system to precisely carry and 8.8lb payload to 10,000 feet. Started as a small group of sudents experimenting with rockets to a multidisciplinary team of 20+ students. Competed in 2018 and one of 24 teams selected from 126 competitors to deliver a podium presentation on the technology behind the air braking system.

Ontario Engineering Competition
Programming Competition Director

Organized the first "live" programming competition. Built a simulated stock trading environment where prices were simulated using an algorithm based on brownian motion. During the 8-hour competition teams had to work fast to build and deploy a realtime trading algorithm.

Dataland
Hacker • May 2018 — Present

Personal project to run data services for personal experimentation at hacker scale. Serves as an environment to run scheduled data mining tasks, as well as pipelines for data modeling and transformations. Complete with data backups log notifications. Currently hosts the Proline Sports Betting project among other smaller data projects.

Electrical Engineering Skills

Simulation Construction
- Modeled complex time dependent systems in Matlab using transfer matrix method and Fourier transfer functions
- Used Matlab Simulink to solve optimization problems
- Used Multisim to analyze performance of circuits
- Self-taught FEA, and CFD simulations of basic geometry using both Solidworks and Simscale
- Used lab instrumentation to analyze circuits particularly the oscilloscope, logic analyzer, and 5052 spectrum analyzer

Computer Aided Design & Manufacturing
- Built 3D models using Solidworks; conducting motion studies on mechanical assemblies
- Designed custom PCB Layouts in Eagle CAD and worked through the process of submitting boards for fabrication
- Experienced in the use of rapid prototyping tools, particularly laser cutting and 3D printing
- Hands on experience with traditional fabrication techniques, such as lathe, mill, TIG welding and sheet metalworking

Control Systems
- Design stable systems using Root Locus Technique, analytically and computationally using Matlab Control Systems Toolbox
- Signal filtering techniques such as Frequency, and Kalman filtering
- Operational understanding electromechanical devices and required support circuitry
- Proficient in VHDL for programming PLCs and FPGA specifically using Altair devices

Communication Systems
- Operational understanding of routing in LAN and WAN networks
- Designed transmitters and receivers using various multiplexing and modulation techniques
- Understand the limitations of various communication mediums and protocols

Software Engineering Skills

Language Literacy

- Advanced concepts of C++, specifically use of smart pointers and implementing buffered communication systems
- Python for numerically focused projects with extensive use of Scikit, Pandas, Tensorflow and Numpy frameworks
- Ruby in the context of Rails and web application development
- Javascript for front end applications using the React framework
- Matlab for optimization and simulation problems
- Java for Android app development, and general OOP
- C# for Microsoft .NET development

Data Science

- Implemented data processing pipelines using Apache Spark
- Leveraged Beautiful Soup and Pandas to scrape and sanitize datasets from the web
- Produced stakeholder reports using Mode Analytics

Web Technology

- Worked with MySQL and Postgres Databases at various scales
- Configured applications running on GCP, AWS, and Heroku with Kubernetes and Docker containers
- Utilized other data services, including Kafka Streaming, Redis, Sidekiq, and Sendgrid
- Resolved bugs through investigating logs in splunk and tracing back error messages.

Embedded and IoT

- Build systems using Web Sockets, FTDI, SPI, I2C, UART, and BT interfaces
- Controlled devices using register write commands, and higher level REST APIs
- Understand principles of IP routing and various network topologies

Linux

- Solid understanding of Linux file system, and device tree
- Configured Linux systems for both web and embedded operation
- Leveraged system features such as Cron an shell scripting

Social Links

- **Github**: https://github.com/nikhilperi
- **LinkedIn**: https://www.linkedin.com/in/nikhil-peri-511639109
- **Website**: http://nikhilperi.github.io