Vaskar Nath

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Education

University of Toronto
Toronto, ON

Honours Bachelor of Science in Computer Science, Mathematics, and Statistics. GPA: 4.0/4.0. Average: 92.0% *2018 - 2022*

- University of Toronto Scholar Entrance Scholarship – Awarded to top 5% of UofT students upon admission — $7,500
- Trinity College Kao Family Scholarship – One of 90 scholarships awarded to Trinity students upon admission — $2,000
- In-Course Academic Scholarship for High Academic Achievement — $500

Experience

Intel Corporation
San Jose, CA

Software and Machine Learning Engineer Intern (Tools and Methodologies Team) *May 2020 - PRESENT*

- Conducting end-to-end research, design, and implementation of automated ML bug triager assigning with state-of-the-art accuracy to proper team and person from 400 teams and over 2000 individuals, utilizing 6 million training data.
- Spearheading a scientific exploration into the novel randomized test suites for FPGA Chip designs.
- Curating data science statistics and deploying various tools to be used internally by teams in order to improve product quality and customer experience.

University of Toronto
Toronto, ON

Computer Science Research Intern *May 2020 - PRESENT*

- Received the Department of Computer Science Undergraduate Research Award ($6,000) to support full-time research.
- Exploring extensions to the paper: Validating SMT Solvers via Semantic Fusion by developing an automated technique to effectively fuzz “meaningful” SMT test instances to find bugs in SMT solvers, applying delta debugging techniques to minimize bug triggering test instances, and analyzing solver execution traces to isolate the buggy solver components, utilizing a data-set of 100,000+ SMT test instances.

Alberta Health Services
Calgary, AB

Computational and Statistical Genomics Research Assistant *May 2019 - Sep. 2019*

- Received the Alberta Children Hospital Research Award ($6,000) to support full-time research.
- Developed novel probabilistic and statistical models, utilizing Markov chain theory, Bayesian statistics, and linear algebra, to incorporate and optimize the Wright-Fisher and Moran generative population models under different biological assumptions in C++ and Python.

University of Calgary
Calgary, AB

Applied Mathematics Research Assistant *Jun. 2017 - Sep. 2017*

- Deep exploration of the closed formula for conditional min-entropy, requiring analysis of optimizing the trace of a matrix, diagonalizing a Hermitian matrix, and investigating the properties of tensor products.
- Self-learned topics in advanced linear algebra, calculus, and analysis in order to come up with a clear and concise proof of the diagonal, 2 ×2, and the Werner-state cases of the general optimization problem.

Skills

Languages/Technologies Python, Java, C/C++, JavaScript, JQuery, Google Cloud Platform, Perl, HTML, CSS, Verilog, Git, Linux

Coursework Analysis I & II, Machine Learning, Probability and Statistics I & II, Enriched Data Structures, Linear Algebra, Object Oriented Programming, Software Design, Computer Hardware, Economics, Physics, Organic Chemistry

Projects

Machine Learning Projects *(Python)*

- Developed and analyzed numerous ML models and concepts ranging from classifying hand-written digits to predicting housing prices.
- Implemented K-nearest neighbours with K-fold cross-validation, Naive Bayes Classifier, and Condition Gaussian Classifier from scratch.
- Leveraged Python libraries to analyze performance of Support Vector Machines, Ada-Boost Classifier with various different base-classifiers, and MLP.

Club Finder *(Python, Beautiful Soup, Flask API, JavaScript, JQuery, Google Cloud Platform)*

- Developed end-to-end website to connect students with clubs, using machine learning to match interests.
- Created database by scraping and cleaning the data from various sites; implemented a topic-based sentiment analysis (LDA) model.
- Deployed Python/JS scripts with Flask using Google Cloud Platform with integrated Google Analytics.

Multi-game Android App *(Java, Android Studio)*

- Developed a large-scale android app with a group of five, adhering to various object-oriented design and coding principles.

Enhanced Snake in Hardware *(Verilog)*

- Created 4-player snake with a randomly generated fruit, randomly moving fruit, and keyboard input functionality with FPGA.