

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

- Principal researcher in the continuing effort to design and implement an automated ML bug triager that assigns to proper team and person from 400 teams and over 2000 individuals, utilizing ELK and elastic search to maintain and update a database of 6 million training data.
- Spearheading a scientific exploration into the novel randomized logic test suites for FPGA Chip designs.
- Performing statistical analyses and deploying 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 benchmarks.

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 Classifiers 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 school clubs in order to foster a sense of community during the pandemic.
- 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.