

Kunal Chandan

Computer Engineering Candidate

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LANGUAGES

- C/C++
 - Allegro5
- Rust
 - Piston
 - nalgebra
- Python
 - TensorFlow
 - OpenCV
 - Pandas
 - Numpy
 - Selenium
 - Matplotlib
- Shell
- Java
 - OpenGL
- Octave/MATLAB
 - PsychToolbox
- SQL
- LaTeX & XeLaTeX
 - Tikz

SKILLS

- Linux
- Data Processing
- Webscraping
- Git
- Altium

CLUBS

Engineering Society Rep.
Engineering Ambassador

EDUCATION

**UNIVERSITY OF
WATERLOO**
B.ASC COMPUTER
ENGINEERING CANDIDATE

SUMMARY OF QUALIFICATIONS

- **Data engineering** experience from internships at **OICR**, **MappedIn** & **York U**
- **Machine Learning** personal projects with **Tensorflow**, **sklearn**, and **PyTorch**
- 5 years of programming experience in **Python**, **C++**, **Rust**, **Java** & **MATLAB**
- 3 years of experience with **Linux** distributions & **Shell**

EXPERIENCE

MACHINE LEARNING DEVELOPER | MAPPEDIN

Sept 2019 - Dec 2019 | Waterloo, ON

- Designed data pipelines for **cleaning** & **analysis** integrating new **SQL** data warehouse
- Used **Embeddings** + **SVM** + **Random Forest** ensemble models to replace existing **NN** based models reducing inference costs **2X**
- Increased prediction accuracy from **40%** to **80%** on existing **LSTM** models with feature engineering, hyperparameter optimization, and automated data cleaning

BIOINFORMATICIAN | ONTARIO INSTITUTE FOR CANCER RESEARCH

Jan 2019 - April 2019 | Toronto, ON

- Designed genomics pipelines for **data visualization**, **data cleaning** & **analysis** interfacing with existing **R**, **Perl** and **Shell** pipelines
- Project lead of new **statistical analysis** tool for all future studies at OICR
- Wrote future-proof & extensible code for processing **big datasets** (**Pandas** & **Shell**)
- Project open-sourced & version controlled with **Git**; created extensive **documentation**

RESEARCH INTERN | ELDER LAB, YORK UNIVERSITY

June 2017 - June 2018 | Toronto, ON

- Analysis of human response to visual stimulus with **MATLAB** & **PsychToolbox** with 2 novel experiments; research conducted under guidance of **Post-Doc**
- Designed data collection methods using **Amazon M Turk** guided by **PhD** candidates
- Conducted data augmentation, **visualization**, interpretation using **Python**, **OpenCV**, **Matplotlib** for experimental data

PROJECTS

RAY TRACING ENGINE

- Implemented 3D recursive ray tracing engine for arbitrary materials and shapes in **Rust**
- Used traits and modular programming to create extensible scene object interface
- Used **nalgebra** for arbitrary camera and object rotations and positions

PHYSICS ENGINE

- Implemented Kinematics & Electrodynamics written with **Allegro5** & **C++**
- Implemented Quadtrees for increased performance from reduced collision checks and fewer negligible force calculations
- WaterlooWorks and OscarPlus (McMaster) job **crawler**
- **Webcrawlers** for scraping comics from KissComics

AWARDS

- 2018 Co-op Award for Outstanding Achievement
- 2018 University of Toronto National Biology Competition 78th in Canada