KANAV SINGLA

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SKILLS

Languages:	Python · JavaScript · React · SQL · C++ · MATLAB · Django
ML Frameworks:	PyTorch · TorchScript · ONNX · TensorFlow · Keras · sckit-learn · OpenCV · NumPy · SciPy · pandas · seaborn · matplotlib · Weights & Biases · Horovod
Developer Tools:	Git · Linux · AWS · Docker · conda · pip-tools · Jupyter

EXPERIENCE

Huawei Technologies Canada, Noah's Ark Lab | PyTorch · pandas · Docker · Linux   Toronto, ON
AI Engineer Intern, Autonomous Driving   Jun 2021 - Aug 2022
- Contributed to the implementations & patents for the planning stack of Huawei's Autonomous Driving System
- Implemented state-of-the-art end-to-end solutions from literature for prediction & planning in PyTorch
- Orchestrated runs on big data-sets & performed hyperparameter tuning to develop **4 different baselines**
- Developed modular simulation environments for training & offline evaluation of our models, **reducing** team's evaluation & testing times by **50%**

UofT, Dynamic Optimization Lab | Python · TensorFlow · Keras · ONNX   Toronto, ON
Machine Learning Research Fellow (Supervisor: Dr. Chi-Guhn Lee)   May 2020 - Aug 2020
- Developed a contraband detection pipeline for X-ray baggage scans using transfer learning on a private dataset
- Led analysis & testing of **object detection & classification models** to increase the pipeline's recall by **10%**
- Awarded with **UofT Fellowship Award** (valued at $10,000) for successful implementation of practical research
- Achieved real-time inference & **94% recall** for our pipeline deployed at the Seoul–Incheon Intl. Airport

Zzapp Malaria | Python · PyTorch · scikit-learn · Jupyter · matplotlib · seaborn   Remote
Junior Machine Learning Developer   Jul 2020 - Oct 2020
- Worked on the vision pipeline integrating with a map-based mobile app to identify & detect malaria hotspots
- Analyzed different models that utilized topography & satellite imagery to segment the transmission hotspots
- Deployed the app across the sub-Saharan Africa protecting a population of **200,000 people** by reducing mosquito population by over **60%** in as little as three and a half months from deployment
- Won the **IBM Watson's AI XPRIZE** ($5 million) with the team

NOTABLE PROJECTS

BikeShare Demand Predictor | SQL · pandas · TensorFlow · scikit-learn · Docker · AWS
- Performed Exploratory Data Analysis adding new features to the complex dataset forecasting city's bike system
- Implemented **6 different learning algorithms** & performed comparative analysis to deploy the best predictor

sMART - Student Mentorship App | HTML/CSS · React · Django · SQL
- Worked in a team on a mentorship service algorithm for university students
- Built a web app & launched a startup to reach over **1100+ views & 200 subscribers** in the first month
- Pitched at the **DMZ** to qualify amongst the **top 10%** companies for the Basecamp Lite Incubator Program

EDUCATION

University of Toronto   Toronto, ON
BASc. in Engineering Science (Robotics & Machine Learning Engineering)   Expected Apr 2023

Achievements:	Multiple Dean's Honours List · Euclid International Math Contest Honour Roll (Ranked 13th)
Coursework:	Deep Learning & Neural Networks (Grad Course) · Probabilistic Machine Learning (Grad Course) · Microcontrollers & Embedded Microprocessors · Control Systems · Vision for Robotics

PUBLICATIONS

- "*NoFADE: Analyzing Diminishing Returns on CO_2 Investment*", NeurIPS Climate Change 2021