Takehiro **Tanaka**

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Education

Simon Fraser University *Burnaby BC, Canada*
BASc, Engineering Science (Honours with Distinction) - Engineering Physics Concentration *Jan. 2016 - Oct. 2021*
- CGPA: 3.88 / 4.33

Experience

SFU's Multimedia Lab *Burnaby BC, Canada*
Undergraduate Thesis Student *Sept. 2020 - Aug. 2021*
- Researched the video compression effect on object tracking accuracy as a supervised study in SFU Multimedia Lab
- Built the experiment pipeline from data collection to analysis with Python and Bash
- Utilized the HEVC (H.265) codec for video compression and YOLOv3/SORT for multiple object tracking
- Analyzed up to 1,500 data points from 13 video samples statistically by weighted least square multiple linear regression, t-test, and visualization
- Leveraged data science and statistical libraries such as NumPy, Pandas, SciPy, Statsmodels, Matplotlib, and Plotly
- Currently publishing the dataset and 2 research papers

Ford Motor Company of Canada Ltd. *Ottawa ON, Canada*
System Software Performance and Stability (Co-op) *Sept. 2019 - Dec. 2019*
- Contributed to the test automation on in-vehicle infotainment system devices with Python in an Agile environment with JIRA
- Developed the interactive front-end dashboard/visualization of performance data with HTML/JavaScript
- Implemented a responsive design of UI with Materialize framework and Google Charts
- Processed the data from the MySQL database to the front-end system for visualization

SFU's Big Data Hub *Burnaby BC, Canada*
Research Assistant *Jan. 2019 - Aug. 2019*
- Improved the data pipeline from the PostgreSQL database to analytics with Python and Bash with Spark
- Inspected 10,000+ rows of data weekly to monitor, analyze, and maintain the automation on the data pipeline

SFU's Big Data Hub *Burnaby BC, Canada*
Big Data / Data Analyst (Co-op) *May 2018 - Dec. 2018*
- Utilized APIs and web scraping to perform data collection, processing, and analysis mainly using Python
- Performed data cleaning, aggregation, and filtering with Pandas and Spark
- Analyzed 220,000+ rows of aggregated data on the Jupyter notebook with Python and visualized the data with Matplotlib and Tableau
- Migrated the existing data in JSON to the PostgreSQL database and established the data pipeline
- Trained the Word2Vec model to perform text analysis with NLP libraries such as gensim, spaCy, and nltk

Nanodevice Fabrication Group – Simon Fraser University *Burnaby BC, Canada*
Nanomaterial and Nanodevice Fabrication Research (Co-op) *May 2017 - Aug. 2017*
- Researched the fabrication of nanomaterials (2D Materials) by Oxygen plasma using Reactive Ion Etching
- Conducted a characterization of nanomaterials through Raman Spectroscopy with 514nm laser for the measurement analysis
- Analyzed the measurement data with MATLAB to confirm the single-layer thickness of nanomaterials and presented the progress/outcome to the group

Skills

Programming	Python · C/C++ · Bash · HTML/CSS/JavaScript · Fortran · SQL · Object-oriented Programming
Data Analytics	NumPy · Pandas · Matplotlib · Scikit-Learn · Statsmodels · Spark · MATLAB
Tools	Git · GitHub · Visual Studio · Visual Studio Code · Android Studio (Java/XML) · JIRA

Projects

CANnect - Automotive Diagnostics Application
Capstone group project (Mobile App Development Role) *May 2020 - Dec. 2020*
- Built the application that diagnoses vehicle performance with 5 colleagues
- Developed the mobile app using Android Studio with Java and XML
- Implemented dashboard and visualization of performance data in real-time