Takehiro **Tanaka**

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Education

Simon Fraser University — *Burnaby BC, Canada*

BASc, Engineering Science (Honours with Distinction) - Engineering Physics Concentration — *Jan. 2016 - Aug. 2021*

- CGPA: 3.88 / 4.33

Skills

Programming	Python · C++ · Matlab · Fortran · Bash · Object-oriented Programming
Data Analytics	NumPy · Pandas · Matplotlib · SciPy · Statsmodels · Scikit-Learn · Spark · SQL · Tableau
Web/App Development	HTML/CSS/JavaScript · jQuery · Java/XML with Android Studio
Tools	Git · GitHub · JIRA · Maple · LaTeX · Visual Studio · Visual Studio Code

Work Experience

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 in an Agile environment with JIRA
- Developed the interactive front-end dashboard/visualization of performance data using HTML/JavaScript with Materialize framework and Google Charts
- Processed the data from the MySQL database to the front-end system
- Made updates to the automation with Python, software internal tools, and Confluence wiki

SFU's Big Data Hub — *Burnaby BC, Canada*

Research Assistant — *Jan. 2019 - Aug. 2019*

- Continued improving the data pipeline with Bash and Python with Spark
- Inspected the data regularly to maintain the automation on the data pipeline

Big Data / Data Analyst (Co-op) — *May 2018 - Dec. 2018*

- Utilized APIs, web scraping, and surveys to perform data collection
- Migrated the existing data to the PostgreSQL database and established the data pipeline
- Performed data cleaning, aggregation, and filtering using Python 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
- Trained the Word2Vec model to perform text analysis with Python (using gensim, spaCy, nltk, etc.)

Nanodevice Fabrication Group – Simon Fraser University — *Burnaby BC, Canada*

Nanomaterial and Nanodevice Fabrication Research (Co-op) — *May 2017 - Aug. 2017*

- Researched the fabrication of 2D Materials by Oxygen plasma using Reactive Ion Etching
- Conducted a characterization of 2D Materials through Raman Spectroscopy with 514nm laser for the measurement analysis
- Analyzed the measurement data using MATLAB to confirm the repeatability of the procedure

Projects

Impact of Video Compression on Object Tracking Performance

Honours Thesis Project — *Sept. 2020 - Aug. 2021*

- Researched the video compression effect on the multiple object tracking performance as a supervised study in SFU Multimedia Lab
- Built the experiment pipeline from data collection to analysis with Bash and Python
- Utilized the HEVC (H.265) codec for video compression and YOLOv3/SORT for multiple object tracking
- Analyzed the results 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 corresponding journals

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/XML
- Designed UI such as Main Menu, Connection, Settings, Map, and Dashboard
- Implemented the pipeline on the app that reads data with Bluetooth, processes it, and visualizes it in real-time