

SUMMARY

After taking a hiatus from engineering to raise a family, data science expertise leverages a rich hardware engineering background and incorporates machine learning through an intensive and immersive data science bootcamp. Not only dynamic and a quick study in programming languages but also a results-driven achiever with a high degree of attention to detail.

EXPERIENCE

Metis San Francisco, CA
Data Scientist June 2021 to Sept. 2021

Completed an intensive 14-week accredited data science and machine learning bootcamp focused on Python programming, machine learning, data visualization, project design, and communication. Designed, implemented, and presented the following projects:

- **Eco-Acoustic Monitoring of Endangered Species** - Rare species detection in dense ecosystems is central to climate change and conservation monitoring. CNNs enable real-time processing to predict bird and frog species by converting the audio to Mel spectrogram images within a deep learning pipeline.
- **The Cleanest Time to Clean** - Using the WattTime API to query, ingest, and process MOER (Marginal Operating Emissions Rate) values over time, created an interactive webpage to visualize the times of day with lower MOER values when using electricity will produce fewer emissions.
- **Match My Music** - Created a music recommendation model based on the lyrics and mood of songs using unsupervised learning methods and topic modeling.
- **Interpreting Music Genres** - Predicted songs' genres with classification algorithms using both lyric analysis and musical features of the songs.
- **Expanding the Community** - Combined Project Sunroof data with DeepSolar data to visualize and identify low-income areas that would benefit most from single-family and community shared solar arrays.
- **Interpreting Greenhouse Gas Emissions** - Built a linear regression model to interpret countries' greenhouse gas emissions based on social, economic, and geographic data collected via web scraping.

Dolores Park Piano San Francisco & Malmö, Sweden
Piano Instructor 2007 to 2020

- Leaned on bachelor degree in Piano performance to start private teaching business while pausing Engineering career to raise family.
- Accomplished instructing diverse students with broad foundations in music, different training levels, as well as varying musical strengths and weaknesses. Lessons included playing music from standard staff notation, rhythm skills, sight-reading, theory, eurhythmics, solfege, composition, and improvisation

Advanced Micro Devices Sunnyvale, CA
Senior Systems Development Engineer 1998 to 2005

- Proven track record of success as evidenced by earning successive promotions from entry level to Senior Systems Development Engineer in 4 years. Excelled in working on all aspects of computer hardware: validation, board design, FPGA design and emulation, and chip design/verification. Thrived as a flexible team player with the ability to effectively prioritize and juggle multiple projects.
- Completed several Xilinx FPGA-based emulators of networking chips for the design and debug phases of product development.
- Led design and development of circuit boards to enable validation of custom ICs and FPGA emulation.
- Validated chips by creating test plans, running test suites, and completing test reports and formal reviews.
- Designed and verified a networking chip by completing micro-architecture, RTL coding, and verification.
- Completed the synthesis and mapping of chip designs to FPGAs for emulation and testing of the chip pre-fabrication.
- Worked comfortably in diverse teams, bringing an inclusive, open-minded attitude to work.
- Successfully published a patent entitled "Arrangement for Testing Pause Frame Response in a Network Switch." Co-authored 14 additional patents.

CONTACT

✉ melissacooper415@gmail.com
☎ 415-240-0683
📍 San Francisco, CA 94110
in melissacooperlinkedin
🔗 charliedogmel

EDUCATION

Carnegie Mellon University
BS/MS Electrical and Computer Engineering

San Jose State University
BM Piano Performance

SKILLS

MACHINE LEARNING
Linear/Logistic Regression
Classification
Random Forest
Neural Networks
Natural Language Processing
Deep Learning

LANGUAGES + DATA TOOLS
Pandas
Numpy
Scikit-learn
Beautiful Soup/Selenium
Python

DATABASES
MongoDB
SQL

DATA VISUALIZATION
Matplotlib
Seaborn
Tableau

OTHER
Google Cloud
Git
Streamlit

HARDWARE
Verilog HDL
Xilinx Design Manager
Synopsys FPGA Express
CoreGen
Vera
Visio
Debussy