Casey Irvine

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SUMMARY

Software Engineer with 8+ years of experience at industry leaders. Proficient in C++ and Python. Passionate about learning new technologies, developer productivity, devices, IoT, artificial intelligence, machine learning, and developing software that improves quality of life.

SKILLS

- **C++**
- **Modern C++**
- C
- **Python**
- C#
- JavaScript
- Java
- PowerShell
- **COM**
- **Windows**
- **WinRT**
- Linux
- Spark
- Scala
- scikit-learn
- PyTorch
- Keras
- Pandas
- NumPy
- Jupyter
- SQL
- Anaconda
- Docker
- **CMake**
- **Azure DevOps**
- Scrum

EXPERIENCE

Microsoft **Redmond, WA**

Software Engineer *Aug 2011 – Aug 2014, Mar 2015 – Present*

- Used Azure DevOps to build and deploy Docker containers to Azure Container Registry for local and automated cross-platform builds.
- Used Azure DevOps to build and deploy Docker containers for containerized client applications used in functional and end to end testing.
- Used Azure DevOps to build and publish custom Yocto base and update images. Reduced build time from 6 hours to less than 10 minutes with custom build agents.
- Automated cross-platform and cross-architecture build using Python, CMake, Vcpkg, Docker and Azure DevOps.
- Developed OSS reference client for IoT device updates in C, C++ and CMake.
- Refactored OSS C++ Correlation Vector implementation and build to be cross-platform.
- C++, COM and WinRT development of core operating system and browser components.
- Received Windows Phone Excellence in Execution Award.

Amazon **Seattle, WA**

Software Engineer *Aug 2014 – Feb 2015*

- Developed Python tools for testing service reliability and performance during server outages.
- Worked on data ingestion and aggregation pipeline.

EDUCATION

Georgia Institute of Technology **Atlanta, GA**
MS in Computer Science *Aug 2019 - May 2023 (expected graduation date)*

- Specialization in machine learning.
- CSE 6250 - Big Data for Health Informatics
  - Final project used PySpark to process and aggregate clinical note data for patients from MIMIC III dataset. Used PyTorch to implement and train a model built with custom RNN containing GRU cells and compare with a model created using transfer learning with pre-trained BERT model that was trained on domain specific corpus (Clinical BERT). Models were trained and evaluated on predicting patient mortality from clinical note data.
  - Used Pandas, Spark, Spark GraphX, Scala, and PySpark for processing and analyzing healthcare data.
  - Used scikit-learn to train and evaluate various machine learning models.
  - Used PyTorch to implement, train, and evaluate RNNs and CNNs for timeseries healthcare data.
- CS 7638 - Artificial Intelligence for Robotics
  - Implemented Kalmann filter and Particle filter for localization in Python.

University of Arizona **Tucson, AZ**
BS in Mathematics and Computer Science *Aug 2006 - May 2011*

- Summa Cum Laude (GPA: 3.94/4.0).
- Undergraduate TA in math and computer science.
- Undergraduate Research Team Lead.
  - *Terahertz Thermal Emission Optimization with Genetic Algorithm.*
  - `https://www.math.arizona.edu/~brio/VIGRE/THzEmission.html`

VOLUNTEERING

Bellevue College **Bellevue, WA**
Mentor and Guest Speaker *Aug 2017 - Present*

- Mentored students for summer game design program.
- Mentored students for undergraduate research in reinforcement learning. Helped Students build DQN and Gym environment to control Sphero robot in a physical environment.
- STEM Advisory Board member.
- 2019 Global Game Jam judge.