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. Use Pytorch to implement and train model built with custom RNN containing GRU cells with a model created using transfer learning with pre-trained BERT model that was trained on domain specific corpus. 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.