Corey Koehler

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Work Experience

KBR (formerly LinQuest) — Senior Software Engineer August 2023 — Present

Albuquerque, NM

- **Active TS/SCI Clearance**
- Developed a C++ AFSIM (aerospace simulation framework) plugin modeling a configurable GNSS receiver and signal system using a Visual Studio and CMake build architecture
  - Built iterative PNT and pseudorange error models based on satellite receiver research
  - Designed a scheduler to integrate simultaneous pseudorange processing and timing within AFSIM simulation loop
  - Created data logging and plotting functionality in C++ and Python (Pandas, Matplotlib) for large volume data collection of simulated DOP/PNT metrics
  - Integrated receiver with AFSIM scripting language
- Implemented satellite sensor behavior under solar influence in space situational awareness model
- Ensured robustness of code through unit testing (Google Test) and simulation integration testing

NASA Jet Propulsion Laboratories (JPL) — Software Developer Intern June 2020 — August 2020

Pasadena, CA

- Developed a web-based management tool to oversee laboratory logistics and scheduling using HTML, Flask (Python web framework), Bootstrap, and SQL (SQLite3)
- Created a dashboard of 100+ live-updating Matplotlib visualizations for real-time monitoring of lab environments and statistics
- Deployed site with a secure user account system

Acqubit 3D-SensIR Inc. — Software Developer Intern June 2019 — August 2019

Santa Clarita, CA

- Built visualizer and object detection software in C++ for proprietary LIDAR camera using PCL (point cloud library), ROS, and Linux
- Used object detection model to detect keypoints in the setup routine of a Trinity Robotics automated pallet system

Education

University of California, Berkeley August 2019 — August 2023

B.A. Computer Science | B.A. Applied Mathematics

Relevant Coursework:

Robotics, Intro Signals and Dynamical Systems, Circuits, Operating Systems and System Programming, Algorithms, Database Systems, Machine Learning, Computer Security, Data Structures, Linear Algebra, Numerical Analysis

Technical Skills

Programming: C++, C, Python, Rust, Java, JavaScript, Golang, SQL, MATLAB, HTML, Scheme
Libraries: GoogleTest, Matplotlib, Scikit-learn, Numpy, Pandas, OpenCV, Flask, PCL, Node.js, Emscripten
Architectures: Linux, x86, RISC-V, Windows
Tools: Visual Studio, CMake, Jira, Git, Gitlab, ROS, AFSIM

Additional Experience

Robotic Cable Fitting — Robotics Project August 2022 — December 2022

Berkeley, CA

- Developed depth sensor computer vision pipeline in Python for cable endpoint detection with OpenCV and hardware-in-the-loop inverse kinematics behavior for a YuMi Bimanual robot in automated cable fitting task
- Created initial software later extended in research published in IEEE - https://ieeexplore.ieee.org/document/10711836

x86 Operating System — Operating Systems Project June 2022 — August 2022

Berkeley, CA

- Added multithreading, loading and running user programs, and a file system to an x86 operating system in C
- Used GDB (GNU Debugger) to identify and resolve memory issues by tracing through x86 assembly