Reese Grimsley

Systems Engineer seeking full-time role in Cyber Physical Systems, Industrial IoT, Sensor Networks

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EDUCATION

Master of Science in Electrical and Computer Engineering — Graduation: Dec. 2021
Carnegie Mellon University, Pittsburgh, Pennsylvania — GPA: 3.87

Bachelor of Science in Electrical Engineering — Graduated: May 2019
Minors in Mathematics and Business — GPA: Major: 3.95
Texas A&M University, College Station, Texas — Overall: 3.97

COURSE HIGHLIGHTS

- Wireless Device Architecture
- Wireless Software Systems Architecture
- Machine Learning for Signal Processing
- Embedded Real-Time Systems
- Building Reliable Distributed Systems
- Embedded System Software Engineering

TECHNICAL SKILLS & KNOWLEDGE

Software: C, Embedded C (Cortex-M), Python, Embedded Linux, Machine Learning, Real Time OS, NodeJS, Arduino, SQL

Hardware/Systems: PCB Design, Low-Power Optimization, LPWAN, SMT Assembly

Topic Areas: Embedded Systems, Wireless Sensor-Actuator Networks, Environmental/Urban Sensing, Cyber Physical Systems, Clock Synchronization, Real Time Systems

RESEARCH PROJECTS

TickTalk – Timing API for Federated Cyber Physical Systems

- Designed and implemented a runtime architecture based on dataflow process networks in Python, NodeJS for programming and coordinating distributed, time-sensitive applications
- Led team to win 2nd place in CPS-Week Student Design Competition for our design tools showcased on a 1/10th scale autonomous vehicle smart intersection using Nvidia Jetsons

EnviSense: Environmental Sensing Platform for Remote, Battery-Operated Stream Monitoring

- Planned and deployed a small network of battery-powered sensors with the U.S. Geological Survey in Northern CA for water stream measurement in the Russian River Valley
- Implemented cloud software and device firmware to support network planning and fault tolerance

CommonSense: Low-Power Sensing Platform for Rapid-Prototyping IoT Systems

- Designed, implemented, and tested a hardware architecture with extensible interfaces for add-on PCBs and built-in power diagnostic hardware for measuring battery usage across compute, storage, add-on PCBs
- Configured build environment within PlatformIO and implemented baseline drivers and tests

Robust Multimodal User Interface Fusing Gesture and Voice

- Integrated inertial measurement unit (IMU) based hand-gesture recognition and cloud-based speech recognition using inter-process communication (IPC) in Java and C
- Developed a framework for a decision-level fusion engine using a Bayesian Network and slotted command ontology for smart home devices

JOB EXPERIENCE

Applications Engineer Intern, Texas Instruments, Dallas, TX — Summer 2018, 2019

- Developed applications and models for the TI Deep Learning Library for image processing DNNs on Sitara Cortex-A microprocessors running Yocto Linux
- Created datasets for image recognition, pixel-level segmentation, object detection, trained models, and evaluated performance on target processor