Keenan Johnson

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EDUCATION

MISSOURI S&T
B.S. Computer Engineering
Minor: Computer Science
Rolla, MO

COURSEWORK

Circuits
Computational Intelligence
Discrete Linear Systems
Embedded System Design
Network Design
Numerical Methods
Operating Systems
Pervasive Computing
Processor Architecture
Theoretical Physics

SKILLS

C
C++
Python
NodeJS
Labview
Networking
Fault Tolerance
Data Acquisition
Control Systems
Eagle PCB Layout
8051 Assemly Architecture
AVR Assembly Architecture
ARM Assembly Architecture

PUBLICATIONS

[1] K. Johnson. Telemetry processor design for a remotely operated vehicle. In *Proc. International Telemetering Conference*, San Diego, CA, Oct. 2014.

[2] K. Johnson. Telemetry processor design for a remotely operated vehicle. *IEEE's The Bridge*, Nov. 2014.

HONORS

American Society for Gravitational & Space Research Presentation Award
IEEE-Eta Kappa Nu
Tau Beta Pi Engineering Honor Society
Eagle Scout

EXPERIENCE

SPACE EXPLORATION TECHNOLOGIES | Software Engineer
Jan. 2013 - Present | Los Angeles, CA

- Develops software used to control the real time operations of all SpaceX vehicles, launch pads, and test facilities
- Develops simulation software to simulate all aspects of the launch pad and spacecraft in order to train operators and verify automated launch sequences
- Supports Launch and Mission Operations as ground software operator

MARS ROVER DESIGN TEAM | Team Lead, Telemetry and Control
Aug 2013 – Dec. 2014 | Rolla, MO

- Designed and manufactured custom P.C.B. that contains a main A.R.M. architecture processor, an AVR data processor, G.P.S. sensor, Bluetooth radio, and other communication hardware
- Developed real time software in C for both ARM and AVR processors to control the operation of the rover

ADTRAN | Carrier Networks Product Qualification Co-op
May 2012 – Aug. 2012 | Huntsville, AL

- Developed automated tests for enterprise networking equipment
- Developed concurrent firmware update system for large networking test beds

MINERS IN SPACE DESIGN TEAM | President
July 2011 – Aug. 2012 | Rolla, MO

- Lead team of 20 in proposing, designing, constructing, conducting, and evaluating Micro-gravity research in partnership with N.A.S.A.

PROJECTS

UNIFIED AND OPEN HOME AUTOMATION

- Created an open source home automation embedded system that utilizes the home power network for communication

NEURAL NETWORK MUSICAL GENRE CLASSIFICATION

- Created a Neural Network to classify the genre of audio samples
- Achieved 74.68% classification accuracy, rivaling 70% human study accuracy

MICROGRAVITY TESTING OF ACTIVE DECOMPRESSION CPR

- Developed new method for single rescuer C.P.R. in Microgravity in which the rescuer positions themselves behind the victim and performs Active Decompression C.P.R. using a suction cup device
- Designed instrumented C.P.R. dummy to measure and record depth and rate of compressions using two accelerometers and a pressure sensor

MICROGRAVITY TESTING OF SATELLITE THRUSTER

- Tested propellant management device in R-134a cold gas propulsion system for a micro-satellite in micro-gravity
- Constructed automated test bed using Labview for control and data acquisition

MINING USER SIMILARITY IN GEO-SOCIAL NETWORKS

- Calculated the spatial similarity of two trajectories using statistical clustering techniques in order to mine semantic information about user similarity

MEGAMINER ARTIFICIAL INTELLIGENCE COMPETITION

- Designed successful A.I. for 4 competitions using C++ and C#