

# Resume

Daniel Joel Drake

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## 1 Contact

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## 2 Education

- Bachelor of Science from UAH.
  - Major in Mathematics.
  - Minor in Computer Science.
  - Graduated December 6, 2018
- Associates Degree from Calhoun Community Collage
  - Major in Mathematics
  - Graduated May 27, 2016

## 3 Previous Employment

Quantum Information Extraction  
Time: January 1st 2019 - March 27th 2020  
Location: 2302 Triana BLVD HUNTSVILLE, AL, 35805  
Position: Electronics Engineer  
Contact:

- Dr. Anthony Hester - ahester@qieinc.com - 256-684-0988
- Dr. Charles Hester - chester@qieinc.com - 256-651-3619
- Ricky Hammon - rhammon@qieinc.com - 256-476-5171

Previous non-technical work available on request.

## 4 Skills

- **Graphics, Networking, and Camera Programming**
  - Blender, Unity with deployment to the Oculus Quest
    - \* Precision models developed for 3D printing with application to prototyping and virtual reality environments.
    - \* Two unity games developed. One as a traditional 3D game. One as a VR game.
  - C++ based OpenGL and GTK graphical user interfaces, game design, and machine learning interfaces
  - High speed image and video processing design utilizing Arrayfire.
    - \* Real time - Fourier analysis based microscopic interferometric frequency detection applied to MEMS testing

- Video for linux 2 and UVC application designs

- **Network Programming and Design**

- TCP, UDP, SQL, UART, SPI, I2C, and JESD204B implementations with application to multiplayer games, general purpose networking including data management, and board to board communications

- **FPGA design**

- Xilinx development using Vivado and ISE on the Virtex 7 written in Verilog
- High speed ADC control implementation
- High speed SFP networking control

- **Custom Electronics designs**

- 10 Gb/s hardware design of optical - electrical media converter devices(SFP/SFP+ based Fiber, freespace, and ethernet interfaces)
- High voltage arbitrary function generation to control a fast steering mirrors
- Use and automation of Kicad and Eagle

- **High speed optical systems**

- Microscopic interferometric system design
- Free space digital network design

- **Security Systems Design**

- Real time intrusion detection based on Information theory and Algebraic Topological theory.
- NIST 800-171 compliant system design

- **Miscellaneous**

- Arduino and Raspberry Pi(2,3,4) programming as micro-controllers and RTOS
- Full stack website development
- Esoteric language experience
- Number theory and Calculus numerical approximation systems
- Operating system proficiency: Linux(Arch, Manjaro, Debian, Raspbian, Ubuntu, Fedora), Mac, and Windows