# Jacob Miller

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## EDUCATION

**Louisiana State University (LSU)**                                                    **December 2021**
**Ogden Honors College**                                                                      GPA: 4.130
Bachelor of Science, Electrical Engineering

## WORK EXPERIENCE

**LSU Department of Physics and Astronomy**
**Tiger Eye 1 Project Manager**                                              **December 2020 – Present**
- Coordinate payload development between LSU team, detector manufacturer, and vehicle provider
- Develop hardware and software interfaces between mission payload and vehicle flight computer
- Develop ground station software for mission support

**LSU College of Engineering Capstone Design Program**                       **August 2020 – May 2021**
- Development and design of electronics for a handheld device that leverages deep learning for the autonomous diagnosis of skin lesions
- Management of project budget

**Electrical Engineering Department**                                           **January 2019 – Present**
- Mentor: Dr. Jian Xu
- Assist in the development of a new biomedical imaging device for dental imaging and real-time imaging for cancer surgery
- Analyzed imaging data and utilized deep learning methods to identify tooth cracks in images

**Louisiana Space Grant Consortium**                                        **May 2018 – January 2020**
- Mentor: Dr. T. Gregory Guzik
- Assist in the designing, testing, and building of scientific balloon payloads
- Make flight predictions and oversee flight operations in preparation for scientific balloon flights
- Instructor for the LaACES program which teaches undergraduate students how to develop a scientific balloon payload following NASA's guidelines and procedures

**National Aeronautics and Space Administration (NASA) Goddard Space Flight Center (GSFC)**
**Spring Intern**                                                            **January 2020 – May 2020**
- Developed test procedures for electromechanical components for CubeSat missions. Coordinated project between multiple branches.
- Developed ground support equipment and flight software for PetitSat mission

**NASA GSFC Summer Intern**                                                 **June 2020 – August 2020**
- Aided in the development of an augmented reality app for Microsoft Hololens for the detection of components on a printed circuit board and to determine if they were installed correctly

## SKILLS

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|---|---|---|
| - C++ | - EAGLE PCB | - Arduino |
| - MATLAB | - C | - Verilog |
| - PSPICE | - Python | - Unity |

## RELEVANT COURSEWORK

- **EE 4745: Neural Computing**
  - Neural networks and automata; network architecture; learning models; applications to signal processing, vision, speech, and robotics; VLSI implementations
- **EE 4580: Topics in Control System Design**
  - Compensation of single loop and multiloop systems; state estimation; stability; application to industrial controllers; design using root-locus and Bode design methods
- **EE 4625: Digital Communication and Networking**
  - Digital coding of analog information, baseband transmission, decision theory, modulation, design considerations and applications
- **EE 4780: Introduction to Computer Vision**
  - Computer processing of images, including image acquisition systems and computer systems for processing images; preprocessing techniques; image segmentation; emphasis on design of image processing software
- **EE 3752: Microprocessor Systems**
  - Theory and design of microprocessors; semiconductor technologies, architectures, assembly language, software development, input/output design, applications, and interfacing

## AWARDS/INVOLVEMENT

- Gene and Betty Van Norman Scholarship **Awarded Spring 2018**
- Amateur Radio Society at LSU **Spring 2018 – Present**
- Society of Peer Mentors **Spring 2019 – Spring 2020**

## PUBLICATIONS

Li, Z., Holamoge, Y. V., Li, Z., Zaid, W., Osborn, M. L., Ramos, A., Miller, J., Li, Y., Yao, S., Xu, J. (2020). Detection and analysis of enamel cracks by ICG-NIR fluorescence dental imaging. *Annals of the New York Academy of Sciences, 1475*(1), 52-63. doi:10.1111/nyas.14374