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LUCAS GUSMAN

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EDUCATION

Gainesville, FL **University of Florida** **June 2016 – May 2020**

- **Major:** Aerospace Engineering, B.S. (GPA 3.1)
- **Minor:** Computer Science & Information
- **Relevant Coursework:** Numerical Methods, Astrodynamics, Solidworks, Design and Manufacturing Lab, Controls of Mechanical Systems, Mechanics of Materials, Thermodynamics, Aerodynamics, Dynamics.

WORK EXPERIENCE

Small Business Co-Founder **Just Two Broke College Guys** **Summer 2017 – Present**

Website: www.twobrokecollegeguys.wixsite.com/book

- Gained over **20 regular clients** by providing services such as yardwork, logo design, and tutoring
- Profited over **$2600.00** to date, investing about **$375.00** of that towards business cards, company website, and acquiring rights to the business name (in progress).

TECHNICAL EXPERIENCE

Rocket Team, Modeling & Sim. **University of Florida** **Spring 2018 – Present**

- Improved design sensitivity by 7% by simulating test flights with different fin configurations on OpenRocket
- Achieved a suitable motor configuration for rocket design that could achieve 30,000 ft without going over Mach 1 (to conserve fuselage integrity) running simulations on Openrocket.
- Currently developing a 6 DOF MATLAB code to better simulate the flight dynamics of the proposed rocket and to test the accuracy of current analysis made on other platforms such as Openrocket.

Agreggator, Mechanical **University of Florida** **Fall 2018 - Present**

- Contributing member of one of the robotics teams that competes at NASA's Robotic Mining Competition
- Modeled, and manufactured improved digging buckets from previous years, able to withstand continuous digging of the competition soil and hold about 30% more gravel per bucket than previous designs.
- Analyzed penetrometer data of the competition soil along with the design's estimated weight and derived the minimum surface area required to support the robot without sinking in order to aid the wheel design process
- Currently designing a mechanism that can attach the digging arm to the robot's chassis and raise/lower the digging arm as needed throughout the competition.

Design and Manufacturing Lab **University of Florida** **Spring 2019 – Present**

- Exposed to full manufacturing process: research, concept design, justifications, prototyping, manufacturing. Design project task was to build a robot to traverse provided course while accomplishing certain tasks.
- Fully designed, modeled, and manufactured bucket manipulator mechanism of the robot consisting of 80/20 and sheetmetal parts. Design improved performance by allowing the team to handle bonus tasks for points.
- Manufactured wheel hubs and motor mounts out of aluminum operating a lathe and a mill (CNC and manual)

ADDITIONAL EXPERIENCE AND PERSONAL PROJECTS

- **Hitchhicker (Swamp Hacks '19):** Developed and demoed a rideshare app called Hitchhike for SwampHacks 2019. Gained experience using Android Studio for front-end development, backend coded in Java.
- **MATLAB Image Analysis:** Wrote programs that can both analyze and manipulate image files for different uses (initial idea was to beat the game 2048)

RELEVANT SKILLS

- MATLAB – 3yrs.
- Openrocket – 1yr.
- Portuguese (Native)
- SolidWorks – 3yrs.
- Java – 1yr.
- Manual Milling
- Excel – 4yrs.
- C++ – < 1yr.
- Lathe Operations
- STK (level 2 certified)
- JIRA – 1yr.