**Education**

**B.S. Mechanical Engineering** May 2020

*University of Oklahoma, Gallogly College of Engineering* Norman, OK

* Deans Honor Role + University Honor Role
* Advisor: Dr. Siddique

**Research Experience**

**Undergraduate Academic Assistant** May 2016-May 2020

Advanced Radar Research Center Norman, OK

* Work under ARRC professors to help in Mechanical Design on multiple projects
* Help operate drones legally for Data Missions
* FAA Part 107 Certified Pilot in Command
* 3D Printer Operation and Parasolid Design
* FAA certified four aircraft used for Data Missions with Scientific Payloads

**Undergraduate Academic Assistant** May 2016-May 2020

Phased Array Antenna Research & Development Group Norman, OK

* Designed/Built/Flew multiple Scientific Payload Drones
* Design/Tune/Operate 3 Axis Gimbals and Electromechanical Systems
* Attach Phased Array Radar to 3 Axis Gimbals
* Attach Gimbal Radar to UAV
* Create Ground Station, Safety Protocols, Mission Logistics
* Scan antenna patterns within Radio Frequency Anechoic Chambers

**Undergraduate Academic Assistant** May 2016-May 2018

Center for Autonomous Sensing and Sampling Norman, OK

* Operated as a Mechanical Engineer for a Weather Drone Company
* Designed Launch Box, Multi-copters, Ground Station, Drones, Mission Logistics
* Operated Scientific Equipment in remote locations for data acquisition
* Observed and rectified problems to ensure operational success
* Supported researchers with technical knowledge and experience for reliability
* Designed/built/flew OU’s First FAA Part 107 Atmospheric Profiling Drone: Coptersonde
* Multiple missions & interstate travel to conduct atmospheric profile data acquisition (CO, OK, UT)

**Publications & Manuscripts**

**CopterSonde Publications, Power Point Mention, Citations:**

1: <https://de7e2538-06df-4851-9c34-e16e29f9358b.filesusr.com/ugd/fa1e4d_5f4465c5dcec432bbe4fbcb56286f504.pdf>

2: <https://de7e2538-06df-4851-9c34-e16e29f9358b.filesusr.com/ugd/fa1e4d_e61a9ff184a443e89664e89cda6e349a.pdf>

3: <http://www.isarra.org/wp-content/uploads/2018/09/Poster_Benoit.pdf>

4: <https://de7e2538-06df-4851-9c34-e16e29f9358b.filesusr.com/ugd/fa1e4d_eddf6db5a3f7413e84e58be19055fc38.pdf>

5: <https://de7e2538-06df-4851-9c34-e16e29f9358b.filesusr.com/ugd/fa1e4d_2b477387ed8d4f359110a9b235a233f1.pdf>

6: <https://de7e2538-06df-4851-9c34-e16e29f9358b.filesusr.com/ugd/fa1e4d_a4c1790f36254c248fb9945fea1df07b.pdf>

7: <https://de7e2538-06df-4851-9c34-e16e29f9358b.filesusr.com/ugd/fa1e4d_f86bbff1fdef4f6e8f260137da29d375.pdf>

8: <https://de7e2538-06df-4851-9c34-e16e29f9358b.filesusr.com/ugd/fa1e4d_d82169db3f2c430f98ded460493c9867.pdf>

9: <https://de7e2538-06df-4851-9c34-e16e29f9358b.filesusr.com/ugd/fa1e4d_4e8575cc600940cfb89139101b9f550e.pdf>

10: <https://de7e2538-06df-4851-9c34-e16e29f9358b.filesusr.com/ugd/fa1e4d_221ea4f7b4ca4d09a63fb9b2f72a2b64.pdf>

11: <https://de7e2538-06df-4851-9c34-e16e29f9358b.filesusr.com/ugd/fa1e4d_1bb9f10199e84e15a914faaa3dae3aa6.pdf>

**Sooner Rover Victory:**

1: <https://de7e2538-06df-4851-9c34-e16e29f9358b.filesusr.com/ugd/fa1e4d_9b7bc149e0b746079f4527b7d246c094.pdf>

2: <http://www.oudaily.com/news/rovie-mcroverface-clutches-first-place-victory-in-nasa-competition/article_978969c4-2b70-11e6-847a-d7189c6d27ae.html>

3: <https://www.azorobotics.com/News.aspx?newsID=8513>

4: <https://www.engineering.com/Blogs/tabid/3207/ArticleID/12338/Student-Engineers-Win-the-Day-Against-Peers-at-NASA.aspx>

5: <https://robo-ops.nianet.org/>

6: <http://ou.edu/soonerrover/>

7: <https://blogs.ou.edu/ame/2017/05/15/sooner-rover-team-visits-att-headquarters/#.XksBuJNKjfZ>

8: <https://www.nasa.gov/feature/rovie-mcroverface-wins-nasa-planetary-rover-challenge>

**Phased Array Drone Development:**

1: <https://de7e2538-06df-4851-9c34-e16e29f9358b.filesusr.com/ugd/fa1e4d_816c92f7efad4613a7c759d7fae8d1dd.pdf>

2: <https://www.atmos-meas-tech.net/11/5519/2018/>

3: <http://2017apsursi.org/AP17_ProgramGuide_v009_web.pdf>

4: <https://ieeexplore.ieee.org/document/8530587/metrics#metrics>

5: <https://ieeexplore.ieee.org/document/8959698>

6: <https://ieeexplore.ieee.org/document/7944287>

7: <https://www.ou-arrc-paard.com/>

**Presentations**

**Presentation Speaker @ 2016 Nasa Space Conference San Diego, CA**

* Sooner Rover victory, mechanical contributions and design-specific attributes

**Presentation @ ATT to Randall Stevenson & Exec Staff Dallas, TX**

* Sooner Rover Victory, Mechanical Contributions and Design Specific Attributes
* Team Logistics, Meeting Schedules, Agendas, Communication, Strategy, and Democracy

**Presentation @ Boeing OKC to Director & Upper Staff Oklahoma City, OK**

* Sooner Rover Team promotion, mechanical contributions and design specific attributes
* Team logistics, Meeting Schedules, Agendas, Communication, Strategy, and Democracy
* Volunteer outreach operation to inspire STEM majors

**Leadership Experience**

**Sooner Rover Team Pilot & Lead Mechanical Summer 2015 – Fall 2017**

* Provided insight for maximum performance in mechanical design; cut, welded, finished, and assembled rovers
* Operated rover remotely 500 miles away for record breaking 1st place performance
* Inspired a new generation of students to tackle problems and transition team lead responsibilities

**Haliburton Non-Disclosure Project**  **Summer 2013**

* Frac water conditioning, culture testing, sample acquisition, economics, sterile procedure development
* Remote site lab management and special equipment operator

**Schlumberger Capstone Project**  **Spring 2020**

* Referred by reputation to Schlumberger to complete a student-designed and executed research project

**Specialized Training**

FAA Part 107 Certified Drone Pilot

C++, VBA, Java, VHDL, HTML, Website Design, LABVIEW, MATLAB

Robotic systems engineering design experience: chassis, wiring, programming

Construction contractor and employee/manager: 14 years’ experience

SolidWorks, FEA, Statics, Physics, Calculus, Differential Equations, Numerical Methods, Statistics

Microsoft Office Suite: Word/Excel/Power Point/One Note

Welder: Mig, Tig, stick, inductive, resistive, braze, solder

Metallurgist: Metcalf experiment, smelt, forge, cast, crystal structure, alloy chemistry

Engine and driveline rebuild specialist: 20 years’ experience

Composite construction: carbon fiber vacuum setting, high pressure/high temperature gasket design

Alternative energy capture/storage/transfer/transducer system enthusiast

Recycling technology enthusiast; able to repurpose a large variety of materials

Sustainable permaculture food forestation land management experience: cows, trees, plants, fungus

Heavy equipment operator: 20 years’ experience

Legal marine captain: 15 years’ experience multi vessel and propulsion type

Fabricated 2 separate trailered V8 boats; 20-foot jet boat and 20-foot ski boat

Motorcycle rider: safety course pass and 24 years riding experience

Stereo/audio engineering: 18-kilowatt mobile sound system and 15 years car audio experience

Perfect pitch jazz improv musician: 15 years’ experience and classical coursework

Marksman and conceal carry training

Human Resource mediation and conflict resolution

Nutrition, epidemiology, weight resistance, personal, physical and mental health training

Philosophy, Sociology, Ethnomusicology, Geography, History, Spanish, Choctaw, Cherokee, Sacred Geometric Symbols & Ratios, Astronomy, Astrophysics, Modern Physics, Relativistic Physics, Classical Physics

Crypto currency enthusiast, blockchain integration designer, cryptographic security, open source money, Virtual Machine trade-bot network engineer, cryptographic currency miner and waste heat rejection/utilization

**Technical Skills**

Able to travel globally, US Passport holder, fluent English, legal US citizen, clean background

Capable of operating any tool or power equipment safely with a brief overview of its operation

Capable of utilizing principles of classical and relativistic physics, chemistry, fluid dynamics, thermodynamics, solid mechanics, calculus, differential equations, ethics, alternative energy, safety, and statistics in my design solutions

Can design, machine, cut, weld, bond, assemble, clean, measure, and present professionally

Ready to identify problems and provide multipath solution choices based on constraints to my superiors

Experience building drivelines of every respect, fully autonomous flight systems, Radars, and research equipment

Experience incorporating data acquisition systems for data-driven decision making

Experience working with multicultural coworkers and vendors around the world

Built a 60MPH jetboat from scratch, 30+ UAV’s, 2 robotic lawnmowers, engines, vehicles, boats, and motorcycles

Experience building websites, linking phone apps and smart controls to electromechanical systems

Experience with 3D printers, CO2 laser cutters, and diode lasers

**Awards of Excellence**

* **First Place** at NASA RASC-AL Robo-Ops (pilot, lead mechanical, **all-Time Top Score**)
* Published author (**IEEE, ISARRA, NASA Website, OU Open Text, OU PAARD, Tulsa World**)
* Helped design, build, and fly OU’s first FAA Part 107 drone: CopterSonde 1
* Part 107 Pilot in Command during OU’s first airspace UAV deconfliction tests
* University Rover Challenge 2017 contestant
* Gallogly College of Engineering upper division Mechanical Engineering student
* Thousands Strong Campaign (>400% funded)
* Lunch invitation to speak with Randall Stevenson (CEO of ATT)
* Dinner invitation to speak with Dr. Martin Fengler (CEO of Meteomatics)
* National Honor Society

**Volunteer Experience**

* Spearhead international business agreement for OU Radar Lab and Swiss Meteomatics
* Engineering Days staff for prospective engineering students (OU)
* Open House Drone display and explain (ARRC)