

CURRICULUM VITAE

Adrian Florea

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EDUCATION

Vanderbilt University, Nashville, Tennessee May 2022
Bachelor of Engineering in Mechanical Engineering
Minor in Electrical Engineering
Cumulative GPA: 3.54; Major GPA: 3.74

RESEARCH EXPERIENCE

GI Lab – Giovanni Traverso, Massachusetts Institute of Technology May 2021 – Aug 2021
MSRP Intern

- Explored materials and methods for wireless charging antenna long-term gastrointestinal residence
- Optimized shape memory polymer (SMP) device for low pH environment that satisfied volume constraints
- Supported hypothesis that SMP device would have clinical useability with external magnet throughout the stomach
- Organized in-vivo experiments to validate prototype in swine model
- Compiled results and device construction in poster, 5 minute-lightning talk, and documentation

MedLab – Robert Webster III, Vanderbilt University Aug 2019–Present
Student Researcher

- Iteratively designed a modular ten degree of freedom concentric tube actuation unit
- Planned and conducted accuracy and usability experiences on various prototypes of surgical robot
- Debugged motor driver control code and updated system dynamics for prototype
- Wrote a six-page manuscript outlining the results and novel design elements for a conference paper submitted at SPIE image guided procedures and robotic interventions

Sybbure Searle Program, Vanderbilt University Jan 2018–Present
Research Fellow

- Identified and explored research questions in medical and wearable technology fields for 2-3 semesters at a time
- Lead group of four undergraduates in an investigative study about prescription non-compliance in endocrine patients at the Vanderbilt Medical Center
- Presented research topics, updates and results in poster and oral presentation to over 50 over students
- Upkept makerspace and held tutorials for equipment including 3D printers, electronics, and software

TEACHING EXPERIENCE

ME 1151: Introduction to Machining Teaching Assistant Jan 2021 – Present
Department of Mechanical Engineering, Vanderbilt University

- Teaches students metal machining and fabrication techniques on the drill press, lathe, and vertical milling machines.
- Leads hands-on laboratory sessions in the machine shop where students fabricate a hammer from stock steel.
- Focuses on safety and correct usage of machines during instruction and advises students on their machining technique.
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Mathnasium Aug 2017 – Aug 2019
Math Instructor

- Instructs over 50 students in one-on-one session across various subjects in mathematics including

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Advanced Placement statistics, physics and SAT/ACT test prep.

- Coordinates with center director to build lesson plans and techniques to improve learning

POSTER PRESENTATIONS

Vanderbilt Undergraduate Research Fair , Vanderbilt University, TN Poster: Modular Design for Passive Solar Thermal Desalination	Aug 2019
Vanderbilt Undergraduate Research Fair , Vanderbilt University, TN Poster: Design and Characterization of a Disposable Concentric Tube Robot	Aug 2020
Biomedical Engineering Society Annual Meeting , Virtual Poster: Design and Characterization of a Disposable Concentric Tube Robot	Oct 2020
Massachusetts Summer Research Program Poster Session , MIT, MA Poster: Investigation of Delivery Methods for long-term GI wireless electroceuticals	Aug 2021

SKILLS

Software: LabVIEW, Java, C++, Matlab Python, and Android Studio

Hardware: Solidworks, Autodesk eagle, lathe, CNC milling, and Arduino microcontrollers

PROFESSIONAL ASSOCIATIONS

Vanderbilt Vanguard , <i>President</i>	May 2019 – Present
Vanderbilt Robotics Team , <i>Outreach Chair</i>	May 2020 – May 2021
V-Squared Mentoring , <i>Underclassmen Mentor</i>	Aug 2019 - Jan 2020
Association of Latin American Students , <i>Social and Outreach Chair</i>	May 2019 – May 2020
Vanderbilt Motorsports , <i>Vehicle integration team member</i>	Sept 2018 – Mar 2019

HONORS

4 th place Scientific Outreach Nasa Lunabotics Competition	June 2021
Tennessee Louis Stokes Alliance for Minority Participation Scholarship	May 2021
Acceptance to Oregon State University's Robotics in the Real World REU	March 2021
Acceptance to SURE Robotics Program at Georgia Tech	March 2021
Dean's List	May 2021
Dean's List	Dec 2020
Dean's List	May 2019