Maxwell Austin Feinberg

CONTACT INFORMATION

180 Riverside Drive
Deerfield, IL 60015

(847) 975-1669
maxwell.a.feinberg@gmail.com

EDUCATION

University of Illinois Urbana-Champaign, Champaign, IL

B.S. Aerospace Engineering, Minor in Computer Science, May 2018

- James Scholar
- Member of Tau Beta Pi
- GPA: 3.98, Dean's List

Selected course work:

- CS 440 Artificial Intelligence
- CS 543 Computer Vision
- ECE 470 Introduction to Robotics
- ECE 489 Robot Dynamics and Control

Deerfield High School, Deerfield, IL

- GPA: 3.99, Salutatorian 2/431

EXPERIENCE

Nasa Ames Intelligent Robotics Group
Intelligent Robotics Intern — June 2016 - August 2016

- Designed and performed reliability tests for the propulsion and perching arm subsystems of Astrobee, the freeflying astronaut assistant robot for the International Space Station (ISS)
- Developed a bootloader for the dsPIC33EP512MC806 microcontroller by Microchip for the perching arm subsystem of Astrobee
- Utilized the Robot Operating System (ROS) and Gazebo to increase the functionality of the simulator for Astrobee

Danaher Sensors and Controls
Mechanical Engineering Intern — May 2015 - August 2015

- Developed software for an embedded encoder monitoring system that employed cloud computing for data analysis
- Designed and performed thermal and battery tests for the prototype encoder system
- Tested the viability of a mesh network of encoder systems
- Designed tools and fixtures utilized for manufacturing encoders

Evanston Hospital
Surgical Research Intern — June 2013 - August 2013

- Assisted two undergraduate students with their surgery related research projects
- One of the studies examined the safety of a gastric bypass after a sleeve gastroplasty
- The other study compared various laparoscopic vessel sealing energy devices

Northshore University Health Systems
Informatics Research Intern — June 2012 - August 2012

- Created a mobile application designed to aid doctors with Deep Vein Thrombosis(DVT) prophylaxis utilizing the Caprini DVT Score system
- The application is available on the Apple app market under the name Caprini DVT

Additional Experience

Anheuser-Busch Inbev Hack the World
Baxter Research Robot Hack — September 17-18, 2016

- Utilized the Baxter Research Robot to carry out beverage preparation and to analyze the health of grain samples
- Utilized vision feedback to improve the Robot's grasping capabilities
- Utilized multithreading to control both of the robot's arms simultaneously

American Institute of Aeronautics and Astronautics
Technical Director — May 2016 - Present

- Managed 6 Technical Projects with a total team encompassing more than 50 people
- Projects Include: a 3D Printed UAV, JetCat Jet Engine Research, Engineering Open House Projects, Autonomous Hexrotor Design, an FPV System, and a Rocket Simulator

Hexrotor Project — August 2015 - May 2016

- Managed a team of 8 people while they developed an autonomous hexrotor from scratch
- Designed the structure of the hex rotor using a novel, minimalist design to minimize weight and allow for modularity
- Designed software for the hexrotor utilizing the open source ArduPilot project as a base

Junior Board President — August 2015 - May 2016

- Managed a team of 6 people that organized social, educational, and professional events for the aerospace engineering department students
- Taught monthly seminars on how to program using Python and MATLAB for students that lacked coding experience

Bretl Research Group
Undergraduate Research — September 2015 - Present

- Integrated IMU data into visual simultaneous localization and mapping (SLAM) algorithms to improve performance
- Currently implementing a stereo RGBD camera system to localize thin elastic rods in order to test an advanced physics model of the rod

Grants Awarded	**University** NASA Aeronautics Scholarship	Fall 2015 and Fall 2016

Publications

B. Abar, M. Feinberg, R. Tanaka, MD, PhD, M. Ujiki, MD, FACS, *Conversion to Gastric Bypass Is Technically Feasible After Endoscopic Gastroplasty*, Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) , Los Angeles, CA, 2014.

D. Meiselman, Mr, R. Tanaka, MD, PhD, M. Zapf, C. Karras, B. Abar, M. Feinberg, J. Zhao, MD, M. Ujiki, MD, *Evaluation of Vessel Sealing Performance of Ultrasonic Devices in a Porcine Model*, Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) , Los Angeles, CA, 2014.

Programming Languages

Proficient: C++, Java, python, MATLAB, LaTeX
Familiar: C, C#, x86 Assembly, Javascript, Bash, Mathematica

Software Packages

Operating Systems
Proficient: Ubuntu, Debian, Windows 10
Familiar: Arch Linux
CAD
Proficient: Autodesk Inventor, AutoCAD, Pro/Engineer, CREO, NX9/10
Familiar: Solidworks
FEA
Familiar: Abaqus
Software Frameworks
Proficient: ROS, OpenCV, Tesseract, PySerial
Familiar: Microchip IDE and Packages, FTDI Packages, PCL
Additional Software
Proficient: Simulink

References

Ikemefuna Agbanusi, Visiting Assistant Professor, Colgate University,
(315)228-7951, iagbanusi@colgate.edu

Michael McIntyre, GNC Engineer, NASA
(650)279-7182, michael.j.mcintyre@nasa.gov

Jonathan Barlow, Astrobee Integration and Test Lead, NASA,
(801)830-5183, jonathan.s.barlow@nasa.gov

In-Won Park, Robotics Engineer, NASA
(408)455-2051, in.w.park@nasa.gov