Andrew Morgan
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Curriculum Vitae

Education

Yale University, New Haven, CT (2017 – Present)
Doctor of Philosophy in Mechanical Engineering and Materials Science
Focus: Robotics

Youngstown State University, Youngstown, OH (2013-2017)
Graduation with Honors in May 2017
Bachelor of Engineering, GPA 3.98 (President's List & Dean's List)
Major: Electrical Engineering Computer Digital Option
Bachelor of Science, GPA 3.98 (President's List & Dean's List)
Major: Computer Science
Minor: Mathematics

Work Experience

Biz3D Instructor – Week-long 3D Printing Class   **Summer 2016 & 2017**

Youngstown Business Incubator & Youngstown State University
- Developed a curriculum for providing applicable 3D modeling/printing knowledge to the students for later utilization.
- Construct memorable examples to 3D Printing practices in the workplace.
- Facilitated learning through applying foundational design exercises to the course.
- Provide hands-on experience for High School students to have the opportunity to work with new and upcoming technologies.
- Aide students in building a professional network beyond what was currently available.

Honors Engineering Teaching Assistant / **Engineering Lab Manager**
                                        August 2014- June 2017
YSU College of Science Technology Engineering and Mathematics
- Aid students in the understanding of fundamentals learned throughout their coursework
- Develop problems that require advanced critical thinking to prepare students for future courses

- Assisted in the creation of the initiative to expose First Year
  Engineering students to 3D Printing Technologies in 2014 and 2015
- Exemplify the relationships between upperclassman and first year
  students to facilitate learning within the First Year Engineering
  community
- Act as an Honors Ambassador for First Year STEM students to help
  connect Honors College practices into coursework and service
  projects on campus

Auburn REU on SMART UAVS   **Summer 2016**
Auburn Department of Computer Science and Software Engineering
- Developed a Ballistic Parachute Recovery System
  - o Help meet new FAA regulations
  - o Worked independently with publishable paper at end of work
- Construct a "See and Avoid" System
  - o Built using OpenGL and OpenCV
  - o Designed flight simulator and avoidance tool
  - o Easy implementation onto Unmanned Aerial Vehicles
- Worked in teams of two to meet required deadlines.
- Facilitated communication in meetings and presentations.

Test Engineering Co-operative   **Summer 2015**
ABB Inc., Wickliffe, OH
- Tested ABB Power Systems and Power Generation (PSPG) modules
  and components for corresponding tasks of implementation
- Constructed the largest test system ever built by the ABB Research
  and Development laboratory at the Wickliffe site
- Organized and coordinated co-op fundraising for the WE CARE charity
  events to include Rainbow Babies Children's Hospital and Woman's
  Safe

Research Assistant   **August 2014-August 2016**
YSU Department of Computer Science and Information Systems;
Dr. Bonita Sharif
Worked extensively with Dr. Sharif on the Koli Workshop 2014 paper:
- Performed a research case study in accordance to the Koli Workshop
  2014 based out of Koli, Finland
- Project on tracking eye gaze data of novice programmers' progression
  of reading and interpreting source code data
- Took the lead on constructing a paper published and peer reviewed
  within the workshop
- Transcribed eye gaze data into phases, or epics, used to interpret
  cognitive cycles within understanding of source code
- Conducted eye tracking sessions to expose YSU students to eye
  tracking technologies
- Collected independent eye gaze data from YSU students to compare

within paper constraints

YSU Department of Industrial Engineering; Dr. Kerry Meyers
Worked comprehensively with Dr. Meyers on submitting a paper to the Global Journal for Engineering Education exposing student interests to 3D printing technologies

- Co-authored a paper submitted to the Global Journal for Engineering Education I of which extracted the interests of First Year Engineering students on 3D printing technologies and the design iteration process
- Constructed lessons and presentations to introduce students to the fundamentals of Fused Deposition Modeling (FDM) 3D printing
- Composed surveys and questionnaire's regarding experience and interesting on Solid Modeling
- Acted as an ambassador for 3D printing between students and the STEM college in an initiative to enhance awareness of the technology advances presented at YSU

Language Skills: Intermediate Reading and Speaking capabilities in *Greek & Spanish*
Proficient programmer in C, C++, Java, Matlab, Python, Arduino

Awards/Honors:

Youngstown State University Scholars Program USXXI	Fall 2013
Youngstown State University Full-Funded Academic Merit Scholarship	
Tau Beta Pi Fellow 2017	Spring 2017
National Science Foundation Honorable Mention Fellow	Spring 2017
Barry M. Goldwater Scholar 2016	Spring 2016
Tau Beta Pi Scholar 2016	Summer 2016
Ohio State Senate Recognition Award	Summer 2016
Ohio State House of Reps. Recognition Award	Summer 2016
YSU Honors College: Leadership Award	Spring 2016
YSU Honors College: Most Professional Student	Spring 2014 Spring 2015
ΦΚΦ National Honor Society	Spring 2015-Present
ΠΜΕ National Math Honor Society	Spring 2015-Present

ΤΒΠ National Engineering Society	Fall 2015
Gould Honor Society (YSU's Phi Beta Kappa)	Spring 2017
Best Honors Undergraduate Research Project	Spring 2017
STEM Leadership Society	Fall 2013-Present

Research:

Published Research:

- Meyers, K., Morgan, A., and Conner, B. "3D Printing in a First-Year Engineering Design Project". American Society for Engineering Education National Conference, New Orleans, 2016.
- Meyers, K., Morgan, A., and Conner, B. "Using 3D Printing to Understand the Design Iteration Process". Global Journal of Engineering Education, Vol. 18, Issue 1, 2016.
- Morgan, A., Sharif, B., and Crosby, M. "Understanding a Novice Programmer's Progression of Reading and Summarizing Source Code". Koli Workshop 2014. Koli, Finland. 2014.
- Morgan, A., Jones, Z., Chapman, R., and Biaz, S. "An Unmanned Aircraft "See and Avoid" Algorithm Development Platform using OpenGL and OpenCV." Journal of Computing Sciences and College, Vol 33, No 2, 2017.

In Review:

- Calli, B., Srinivasan, K., Morgan, A., and Dollar, A. "Learning Modes of Within-hand Manipulation." IEEE International Conference on Robotics and Automation (ICRA) 2018.
- Spiers, A., Morgan, A., Srinivasan, K., Calli, B., and Dollar, A. "Using Variable-Friction Finger Surfaces and Proprioceptive Sensing to Classify Objects during Robotic Within-Hand Manipulation." IEEE Haptics Symposium 2018.
- Morgan, A., and Chapman, R. "Ballistic Parachute Recovery System for Unmanned Aerial Vehicles (UAVs)". Auburn Research Experience for Undergraduates on SMART UAVs 2016. Study Coordinated with the Department of Computer Science and Software Engineering. Auburn, AL. Accepted for publication in Make Magazine.

Patent:

One Year (Provisional) Patent completed in April 2015 for device intended for utilization in the medical industry. Further iterations are in progress for hopes of filing 20 year patent upon completion.
Patent Application Number: 62/146,434

Presentations: Meyers, Morgan, and Conner. "3D Printing in a First-Year Engineering Design Project." Poster Presentation at the American Society for Engineering Education National Conference. New Orleans, LA. 28 May 2016. Poster Presentation at National Collegiate Honors Council National Conference 2016. Seattle, WA. 14 Oct. 2016.

Morgan and Hovanec. "Digital Licensing Platform for Retro Games." Oral Presentation at Youngstown State University's QUEST: a Forum for Undergraduate Research. Youngstown State University. Youngstown, Ohio. 3 April 2017. (Best Honors Project Winner)

Morgan, Jones, and Chapman. "Computer Vision "See and Avoid" Simulation using OpenGL and OpenCV". Oral Presentation at Gulf Coast Undergraduate Research Symposium. Rice University. Houston, Texas. 22 October 2016. NSF Emerging Researchers National Conference. Washington, DC. March 2017

Morgan, and Pabst. "Scholar Wars: Enhancing Community through the Spirit of Competition." National Collegiate Honors Council (NCHC). Metropolitan State University of Denver. Denver, Colorado. 6 November 2014.

Morgan, Sharif, and Crosby. "Understanding a Novice Programmer's Progression of Reading and Summarizing Source Code." Koli Workshop 2014. Koli, Finland. November 2014. National Collegiate Honors Council (NCHC). Chicago, Illinois. 13 November 2015.

Organizations & Interests:

YSU Honors College: Honors Trustees Treasurer

June 2015-July 2017

YSU Honors College: YSU Honors Ambassador

August 2015- July 2017

YSU Honors College: YSU Honors Student Orientation Leader

August 2014- July 2017

IGNITE: Student Orientation Leader

August 2016

Tau Beta Pi Webmaster

May 2016- July 2017

YSU Honors Academic Journal "The Emperor" Editor / Reviewer

September 2015- July 2017

YSU STEM 3D Printing Outreach Organizer

December 2014- July 2017

YSU Honors College: YSU Honors Harding Elementary Pen Pals

September 2013- July 2017

Phi Kappa Phi Chapter 143: Student Vice President

March 2015- July 2017

YSU Student Government Association: College of Science Technology Engineering and Mathematics Representative

April 2015-May 2016

YSU Student Government Association: Academic Affairs Committee

April 2015-May 2016

YSU Student Government Association: Co-organizer of the Last Lecture

April 2015-May 2016

Academic Senate Student Representative

September 2015- July 2017

YSU Top Students in Excellence Representative

October 2014

Academic Senate Representative: Student Academic Grievance Subcommittee, Integrated Technologies Subcommittee

September 2015-May 2016

Treasurer of Café Lingua Student Language Organization

August 2014-May 2016

Treasurer of YSU Orthodox Christian Fellowship

August 2013- July 2017

Secretary of YSU Student Chapter of the Institute of Electrical and Electronic Engineers

August 2014-May 2016

Ugandan Water Project Volunteer & Member

November 2013-May 2016

Poverty Awareness in Youngstown Volunteer

April 2015- July 2017

YSU Honors College Coordinator of Scholar Wars

July 2014- July 2017

YSU Information Security and Ethical Hacking Association Member

August 2014- July 2017

YSU Honors Relay for Life Team

April 2014- July 2017

YSU Honors College Coordinator of Shantytown

October 2013-October 2014

Fowler Fire Department Volunteer

October 2011-March 2014