Duncan Mortier Michael

1000 Olin Way M.B. 778, Needham, Massachusetts 02492
duncanmmichael@gmail.com (415) 374-0108
Portfolio: mortier.github.io/DuncanMMichael Linkedin: www.linkedin.com/pub/duncan-michael/104/404/b02

EDUCATION:

- **Franklin W. Olin College of Engineering** **Needham, Massachusetts**
  - *Mechanical Engineering, May 2017*
    - Recipient of the Four Year 50% Tuition Olin Scholarship
    - Relevant Coursework: Mechanical Design, Fluid Dynamics and Heat Transfer, User Oriented Collaborative Design, Principles of Engineering, Dynamics, Mechanics of Solids and Structures, Mechanical and Aerospace Systems, Introduction to Mechanical Prototyping

WORK EXPERIENCE:

- **Olin College**
  Mechanical Engineering Research Student **June-August, 2015** **Needham, Massachusetts**
  Designed landing gear to enable drones to land and take off from tree branches, telephone wires, and the edges of buildings. The project was funded by the Massachusetts Space Grant awarded to Olin College.
- **Olin College** **January-May, 2015** **Needham, Massachusetts**
  Materials Science T.A.
  Held office hours weekly and attend labs in order to train students on the use of testing equipment and help them interpret their results. Gave additional tutorials on the content of previous classes.
- **EXG Technologies** **July-August, 2014** **Waimea, Hawai'i**
  Head Engineering Consultant
  Designed an inexpensive, ergonomic sleep-study headset. Trained coworkers in Solidworks.
- **Engineering for Kids** **June-August, 2013** **San Francisco, California**
  Lead Teacher
  Designed lessons for students age five to eight in topics ranging from the mechanics of roller-coasters to the programing of simple robots.

PROJECTS AND RESEARCH:

Olin Baja **Aug, 2015 - Present**

- In charge of designing a new gearbox for the 2016 competition. Tuning the engine and CVT.

The Spirit Staircase **January-May, 2015**

- Designed a product for and with people that live in tiny houses for the betterment of their lives. The final product proposal was the Spirit Staircase, an aesthetically pleasing staircase that doubles as an elevator and stows itself away when not in use.

CNC Jigsaw Solver **October-December, 2014**

- Designed all mechanical components of a 4.5x3 foot, four-axis gantry for solving standard 500 piece jigsaw puzzles with an allotted budget of $250. The X and Y axes were leadscrew driven. The Z axis was a modified pull-type solenoid with a custom machined casing and center pin. The A axis was a suction nozzle mounted on a micro hobby servo.

VTOL **June-July, 2014**

- Designed and built an R/C vertical take-off and landing airplane capable of 15 minutes of vertical flight and 30 minutes of forward flight. The craft weighed about .85 kg and produced 1.6 kg of thrust. A 2-axis gyroscopic sensor stabilized the pitch and roll.

Under-Actuated Hand **March-May, 2014**

- Created a claw able to pick up objects ranging in size from a pin to a basketball. Iterated three times, using a variety of materials including 3D printed PLA and laser cut wood. The fingers of the final iteration were 3D printed with shore-60 polymer joints and actuated by a cable-leadscrew system.

Electroencephalography (EEG) Research **August, 2011-March, 2013**

- Using the Emotiv EPOC EEG headset, worked with two colleagues to study the brain's reactions to different stimuli as well as its ability to learn patterns from a computer and vice versa. Presented results at MacWorld/iWorld 2012 in San Francisco.
- Independently extended the previous year's research to control first a flight simulator and then a Parrot AR-Drone via EEG FFT-Key mapping. Presented results at MacWorld/iWorld 2013 in San Francisco.

SKILLS:

- Software: SolidWorks, Matlab, Python, Arduino C
- Mechanical Design/Prototyping
- Mill, Lathe, Forge, Furnace, 3D Printer
- R/C Pilot