

# Kyle Harris Yeates

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## Qualification Summary:

I am a mechanical engineer with 10+ years of specialization in product design and biomechanical research. I have the analytical skills required for scientific research, and the industrial experience to transform ideas into products. My expertise is computer-aided design, mechanical analysis, experimental instrumentation, and manufacturing.

## Relevant Experience:

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|--|---|------------------|
| <b>Research Engineer</b>   | <b>VA Center of Prosthetic Engineering, Seattle, WA</b> | <b>2011-2016</b> |
| <ul style="list-style-type: none"><li>• Developed an actively controlled, mechatronic prosthesis which improved amputee gait over uneven terrain</li><li>• Mathematically characterized human gait over uneven terrain using motion capture and computer modeling</li><li>• Produced and validated measurement hardware, software, and techniques for in vivo biomechanical studies</li><li>• Coupled finite element analysis and mechanical testing to characterize dynamic properties of novel prosthesis</li></ul>  |   |                  |
| <b>Product Design Engineer</b>   | <b>Apple Inc., Cupertino, CA</b>                        | <b>2007-2010</b> |
| <ul style="list-style-type: none"><li>• Designed, tested, and monitored mass production of mechanical elements of iPod Shuffle, Touches and Nano</li><li>• Improved manufacturers' processing of metal, plastic, and glass parts to meet aggressive designs and specs.</li><li>• Enhanced product reliability by using detailed failure analysis of mechanical tests to inform design updates</li><li>• Specified mechanical requirements of electromechanical and cross-functional parts for system integration</li><li>• Collaborated with industrial designers to achieve iconic enclosure aesthetics that satisfied engineering criteria</li></ul> |   |                  |
| <b>Research Assistant</b>  | <b>Polypedal Lab, Berkeley, CA</b>                      | <b>2005-2007</b> |
| <ul style="list-style-type: none"><li>• Created novel measurement tool to record simultaneous 3D ground reaction forces of cockroaches during gait</li><li>• Designed and manufactured a device to alter the transverse plane rotational inertia of a cockroach during gait</li></ul>  |   |                  |
| <b>Design Engineer Intern</b>  | <b>Lunar Design, San Francisco, CA</b>                  | <b>2005</b>      |
| <b>Research Assistant</b>  | <b>UC Berkeley Bio Thermal Lab, Berkeley, CA</b>        | <b>2004-2005</b> |

## Qualifying Skills:

### **Mechanical Design and Computer-Aided Design**

- 10+ years of designing and manufacturing products for mass market and advanced research
- Master of Solidworks, NX; proficient w. ProE
- Highly skilled machinist, and prototype builder

### **Mass Production Manufacturing**

- Plastic molding: complex geometry, double-shots, secondary processing, and material selection
- Metal processing: stamping, forming, welding, machining, turning, finishing, and matl. selection
- Final drawings w. GD&T driven by yield studies
- Manufacturer support, qualification, and QA

### **Mechanical and Mathematical Analysis**

- Experience characterizing physical systems with force/motion measures and computer models
- Proficient w. ANSYS, COMSOL, and NX FEA
- Proficient w. Matlab (stats, image and signal processing toolboxes); familiar with Python

### **Mechatronics and Robotics**

- Experience in actuator/sensor/controller selection, integration, circuit design, and programming in C

### **Leadership and Management**

- Have led research projects to publication, and managed suppliers and contractors in industry

## Recognition:

- K. Yeates, et al., "Balance and recovery on coronally-uneven and unpredictable terrain," *J. of Biomechanics*, Sep. 2016
- K. Yeates, A. Segal, R. Neptune, and G. Klute, "A Coronally-Clutching Ankle to Improve Amputee Balance on Coronally-Uneven and Unpredictable Terrain," *Journal of Medical Devices*, In Progress.
- Inventor on 18 US patents issued for electromechanical design, waterproofing, manufacturing, UI, and others

## Education:

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|---|------|
| • M.S. Mechanical Engineering from the University of Washington, Seattle, WA  | 2016 |
| • M.S. Bioengineering from the University of Washington, Seattle, WA          | 2014 |
| • B.S. Mechanical Engineering from the University of California, Berkeley, CA | 2007 |