

# Michael L. Rivera

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## EDUCATION

**Carnegie Mellon University**, *School of Computer Science*  
Fourth year Ph.D. in Human-Computer Interaction  
Advisor: Scott E. Hudson

Sep 2015 - Present

**University of Pennsylvania**, *School of Engineering & Applied Science*  
M.S.E. in Computer Graphics and Game Technology, *GPA: 3.94 / 4.00*  
Thesis: From Image to Device – A Case Study on 3D Printing for Patient-Specific Care  
B.S.E. in Digital Media Design, *GPA: 3.54 / 4.00, cum laude*  
Advisor: Norman Badler

May 2014

## AWARDS AND HONORS

<b>Adobe Research Fellowship</b> , <i>Honorable Mention</i> (\$2000)	2017
<b>Xerox Technical Minority Scholarship</b> , <i>Recipient</i> (\$1000)	2017
<b>Carnegie Mellon University Sansom Endowed Presidential Fellowship</b> , <i>Recipient</i> (\$60,000)	2017
<b>DreamIt Health Open Canvas Accelerator</b> , <i>Finalist</i>	2014
<b>Society for Technology in Anesthesia 2014 Engineering Challenge</b> , <i>1st Place</i>	2014
<b>Penn Interdisciplinary Talks</b> , <i>Finalist</i>	2014
<b>PennHacks Hardware Hackathon</b> , <i>3rd Place (of 40 teams)</i>	2013
<b>LinkedIn Company Hackday</b> , <i>1st Place</i>	2012
<b>University College London</b> , <i>Affiliate Computer Science Student</i>	2012
<b>PennApps Hackathon 2012</b> , <i>Best Use of the Tumblr API sponsored by Tumblr</i>	2012

## PEER-REVIEWED PUBLICATIONS

- [P3] McDonald, J., Zhao, S., Liu, J. **Rivera, M.L.** 2018. MaxiFab: Applied Fabrication to Advance Period Technologies. In *Proceedings of the 2018 Conference on Designing Interactive Systems* (Hong Kong, June 9 - 13, 2018). DIS '18. ACM, New York, NY. 13-19. DOI: <https://doi.org/10.1145/3197391.3205405>
- [P2] **Rivera, M.L.**, Moukperian, M., Ashbrook, D., Mankoff, J., Hudson, S.E. 2017. Stretching the Bounds of 3D Printing with Embedded Textiles. In *Proceedings of the 35th Annual SIGCHI Conference on Human Factors in Computing Systems* (Denver, Colorado, USA, May 6 - 11, 2017). CHI '17. ACM, New York, NY. 497-508. DOI: <https://doi.org/10.1145/3025453.3025460>
- [P1] Galvez, J.A., Simpao, A.F., Dori, Y., Gralowski, K., McGill, N.H., **Rivera M.L.**, Delsco, N., Khan, H., Rehman, M.A., Fiadjoe, J.E. 2016. Not Just a Pretty Face: Three-Dimensional Printed Custom Airway Management Devices. *3D Printing and Additive Manufacturing*. September 2016, 3(3): 160-165. DOI: <https://doi.org/10.1089/3dp.2016.0025>

## BOOK CHAPTERS

- [B1] **Rivera, M.L.**, Mankoff, J., Hudson S.E. 2018. Embedded and Printed: Approaches to 3D Printing with Textiles. *Trendbook Technical Textiles / Technishce Textilien* (July 2018). 16-19.

## POSTERS AND DEMONSTRATIONS

- [D2] **Rivera, M.L.**, Moukperian, M., Ashbrook, D., Mankoff, J., Hudson, S.E. 2017. Stretching the Bounds of 3D Printing with Embedded Textiles. Carnegie Mellon University's 3D Printing Summit. Pittsburgh, PA.
- [D1] **Rivera, M.L.**, Moukperian, M., Ashbrook, D., Mankoff, J., Hudson, S.E. 2016. Stretching the Bounds of 3D Printing with Embedded Textiles. Carnegie Mellon University's DIY Assistive Technology Summit. Pittsburgh, PA.

## INVITED TALKS

- University of Pennsylvania**, Penn-Interdisciplinary Talks, Philadelphia, PA Apr 2014  
*Tracheal Aire – a step towards patient-specific medical instruments*
- Society for Technology in Anesthesia**, Engineering Challenge 2014, Orlando, FL Jan 2014  
*Tracheal Aire: Patient-specific 3D Printable Williams Airway Intubators*
- University of Maryland, Baltimore County**, McNair Scholars Conference, Baltimore, MD Sept 2013  
*Project PAALM: Phalangeal Angle Approximation through the Leap Motion Controller*
- University of Pennsylvania**, Big Think Innovation Conference, Philadelphia, PA Mar 2013  
*Hacking New Frontiers: 3D Gesture Recognition*

## EMPLOYMENT EXPERIENCE

- Carnegie Mellon University**, Graduate Student Researcher, Pittsburgh, PA Aug 2014 - Present  
Human-Computer Interaction Institute. Exploring novel fabrication methods for rapid prototyping, sensor development and interaction techniques.
- HP Labs**, Research Intern, Palo Alto, CA May 2017 - Aug 2017  
Immersive Experiences Lab. Research 3D printing with piezoresistive materials to create application-specific sensors.
- Facebook**, Software Engineer, New York, NY Jul 2014 - Aug 2015  
iOS and Android Product Engineer on the Places Team. Implemented modular result cards for Nearby Places on Facebook for iOS. Single handedly built the redesigned Nearby Places for Facebook for Android. Developed an edit flow for Places Home Creation on Facebook for iOS.
- Facebook**, Software Engineer Intern, Menlo Park, CA May 2013 - Aug 2013  
Android Engineer on the Facebook Home Team. Built a scalable viewpager with spring animations for the application launcher of Facebook Home for Android.
- LinkedIn**, Software Engineer Intern, Mountain View, CA May 2012 - Aug 2012  
iOS and Mobile Web Engineer for the Mobile Team. Developed event bubble display items and a internal settings module for an iOS calendar widget

library. Implemented the 'Send Congrats' feature for the LinkedIn mobile web application.

## TEACHING EXPERIENCE

**Teaching Assistant**, Carnegie Mellon University, Pittsburgh, PA  
User-centered Research and Evaluation (05-610) Fall 2018  
Software Systems for User Interfaces (05-631) Fall 2016

**Teaching Assistant**, University of Pennsylvania, Philadelphia, PA  
Digital Media Design Capstone Project Course (CIS-497) Fall 2013, Spring 2014  
Introduction to Java Programming (CIS-110) Fall 2013  
Software Design and Engineering (CIS-350) Spring 2013

### Invited Guest Lectures

*3D Modeling for 3D Printing*, Building User-Focused Sensing Systems, Carnegie Mellon University Spring 2017

### Research Mentoring

Kayla Yew, *Sensing of 3D Printed Mechanisms with Conductive Textiles* Fall 2017- Spring 2018  
Shreya Bali, *Understanding Human Relationships with Mobile Phone Sensing* Spring 2017

## SERVICE

**Dean's Student Advisory Council**, HCII, Carnegie Mellon University Oct 2017 - Present  
**Department Ombudsman**, HCII, Carnegie Mellon University May 2016 - Sept 2017  
**PhD Open House Organizer**, HCII, Carnegie Mellon University April 2017  
**Student Volunteer**, ACM Human Factors in Computing Systems (CHI) May 2017  
**Student Volunteer**, 3D Printing Summit, Carnegie Mellon University Jan 2017  
**Student Volunteer**, DIY Assistive Tech. Summit, Carnegie Mellon University April 2016

### Academic Peer Reviewer

ACM DIS 2018, NIME 2018, ACM UIST 2018, ACM SCF 2018,  
ACM CHI 2018

## SELECTED PRESS COVERAGE

**3Ders**, "Carnegie Mellon research project combines 3D printing with embedded textiles" July 2017  
**3D Printing Industry**, "Research embeds textiles in 3D printing for functional, flexible parts" July 2017  
**3DPrinting.com**, "Researchers 3D Print Flexible Textiles For Development of Functional Objects" July 2017  
**3D Shoes**, "3D Printing Combined with Textile Manufacturing" June 2017  
**IEEE Spectrum**, "Mechanical Metamaterials and Other 3D Printing Tech from CHI 2017" May 2017  
**MedCity News**, "Pediatric hospital physicians form 3D printing 'think tank'" Feb 2014  
**MAKE Magazine**, "Hacking on the Frontier of Gestural Input" Feb 2012

## TECHNICAL SKILLS

**Programming Languages:** Java, Javascript, Python, Objective-C, C++, C

**Software Development:** Android, iOS, Arduino, Node.js, Flask, Django, JQuery, OpenGL, WebGL

**Hardware Development:** PCB Design, Hardware I/O

**Fabrication:** 3D Modeling, 3D Printing, Laser Cutting, Paper Prototyping

## REFERENCES

**Scott E. Hudson**, Professor, Human-Computer Interaction Institute, Carnegie Mellon University

**Jennifer Mankoff**, Professor, Computer Science & Engineering, University of Washington

**Rafael 'Tico' Ballagas**, Senior Manager, Immersive Experiences Lab, HP Labs

**Norman I. Badler**, Professor, Computer Science and Information Science, University of Pennsylvania

**Justin Moore**, Engineering Manager, Facebook