

Michael L. Rivera

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EDUCATION

Carnegie Mellon University, *School of Computer Science*
Third 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

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| Adobe Research Fellowship , <i>Honorable Mention</i> (\$2000) | 2017 |
| Xerox Technical Minority Scholarship , <i>Recipient</i> (\$1000) | 2017 |
| Carnegie Mellon University Sansom Endowed Presidential Fellowship , <i>Recipient</i> (\$60,000) | 2017 |
| DreamIt Health Open Canvas Accelerator , <i>Finalist</i> | 2014 |
| Society for Technology in Anesthesia 2014 Engineering Challenge , <i>1st Place</i> | 2014 |
| Penn Interdisciplinary Talks , <i>Finalist</i> | 2014 |
| PennHacks Hardware Hackathon , <i>3rd Place (of 40 teams)</i> | 2013 |
| LinkedIn Company Hackday , <i>1st Place</i> | 2012 |
| University College London , <i>Affiliate Computer Science Student</i> | 2012 |
| PennApps Hackathon 2012 , <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. XXX-XXX. 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. To appear in *Trendbook Technical Textiles / Technishce Textilien* (2018). ###-###.

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
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 Behavior through Mobile Phone Sensing* Spring 2017
Max Yeh, *3D Printing Metals and Rigid Plastic* 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

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