

# SANDEEP ZECHARIAH GEORGE KOLLANNUR

## SUMMARY

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- 9 years of industrial experience in designing and developing world-class products.
- Speaker at international events on technology, research, products, and solutions.
- Ph.D. student researching the intersection of Haptics, Robotics, AR/VR, and HCI at the University of Southern California.

## EDUCATION

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- 2023\* PhD student in **COMPUTER SCIENCE**,  
**University of Southern California**, Los Angeles, United States.  
\* Started September 2019, Ongoing.  
Annenberg Fellowship award of \$34,000 plus tuition (2019-2020)  
ADVISOR – [Dr. Heather Culbertson](#)
- 2019 Master of Science in **COMPUTER SCIENCE**,  
**University of Calgary**, Alberta, Canada.  
ADVISOR – [Dr. Sonny Chan](#) & [Dr. Lora Oehlberg](#)  
THESIS – “*Leveraging Neuroscience to Improve Haptic Rendering*”
- 2015 Master of Science in **HUMAN COMPUTER INTERACTION WITH ERGONOMICS**,  
**University College London**, London, United Kingdom.  
ADVISOR – [Dr. Nicolai Marquardt](#)  
THESIS – “*Design of High-Resolution, Low-Cost Tactile Shape Display*”
- 2007 Bachelor of Technology Degree in **COMPUTER SCIENCE AND ENGINEERING**,  
**Cochin University of Science and Technology**, India.

## PUBLICATIONS

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- (2021) [I/O Bits: User-Driven, Situated, and Dedicated Self-Tracking](#). Kendra Wannamaker, Sandeep Kollannur, Marian Dörk, and Wesley Willett. Designing Interactive Systems Conference 2021 (DIS '21), June 28-July 2, 2021, Virtual Event, USA.
- (2019) [Improving Texture Discrimination in Virtual Tasks by using Stochastic Resonance](#). Sandeep Zechariah George, Hooman Khosravi, Ryan Peters, Lora Oehlberg, and Sonny Chan. CHI Extended Abstracts 2019, CHI 2019, Glasgow UK.
- (2018) [Improving Edge and Texture Rendering in Mid-Air Haptic Systems](#). Sandeep Zechariah George, Ryan Peters, Sonny Chan, and Lora Oehlberg. Position paper for “CHI 2018 Workshop on Mid-Air Haptics for Control Interfaces” at CHI 2018 in Montreal.
- (2014) [Real-time visualization and targeting of online visitors](#). Deepak Pai and Sandeep Zechariah George. Proceedings of the 37th international ACM SIGIR conference on Research & development in information retrieval.

*Note:* I have worked on several projects, apart from published work are chronicled in my **portfolio** at [sandeepzgk.com](http://sandeepzgk.com)

## PATENTS

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- USPTO No. 14/280393: Detecting Behavioral Anomalies and Patterns of Individuals and to Normalize the Overall Results.  
USPTO No. 14/031256: Predicting Spread of Content Across Social Networks.  
USPTO No. 13/916775: Effective Method of Creating Seed Set for Viral Marketing.

## WORK EXPERIENCE

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- Aug 20 – Dec 20 | Grad Assistant – Teaching, University of Southern California, Los Angeles, USA  
*Roles and Responsibilities:* To assist in lab classes for CSCI 445 - Introduction to Robotics (Fall 2020) instructed by Dr. Heather Culbertson at University of Southern California
- Sep 17 – Jul 19 | Grad Assistant – Research, University of Calgary, Alberta, Canada  
*Roles and Responsibilities:* To research in un-grounded haptic systems that enable people to touch, feel, and manipulate soft objects in virtual reality. I am also involved in creating and leading an innovative agile (scrum) based research methodology for the [VT]<sup>2</sup> research group at the University of Calgary.
- Sep 17 – Dec 17 | Grad Assistant – Teaching, University of Calgary, Alberta, Canada  
*Roles and Responsibilities:* To assist in teaching and mentoring students in Introduction to Computer Science for Computer Science Majors I
- Mar 16 – Sep 17 | Principal Software Architect, WebCardio, Kochi, India  
*About the team:* WebCardio is a start-up attempting to revolutionize the world of healthcare in developing countries by bringing them affordable healthcare through the use of cutting-edge technology and a scalable cloud platform.  
*Roles and Responsibilities:* Build, design, develop and deploy the infrastructure for a scalable cloud platform, web interface, and mobile application that can store, process, and run algorithms on ECG data either live or as stored waveforms. Additional responsibilities include managing and leading the team for product development in the mobile, cloud, and web development. I was also responsible for engaging the team in design thinking to develop a more customer-friendly and accessible product.  
*Key Technologies:* JavaScript, NodeJS, Amazon Web Services including Lambda, DynamoDB , S3 and others.
- Oct 12 – Jul 14 | Researcher, Adobe Research Labs, Adobe Systems, Bangalore, India  
*About the team:* Adobe Research is a premier organization engaged in industrial research since the very foundation of Adobe Systems. It has been crucial in creating various technologies that have been critical to the success of Adobe and its products.  
*Roles and Responsibilities:* Developed strategic patented technologies (a few of these are listed in the sections below) for Adobe Digital Marketing Cloud, and created visualizations demonstrating the technologies. My work involving creating strategic visualizations showcasing Adobe Lab's Technologies has been presented at various events, including Adobe Digital Marketing Summit 2013 and Adobe Max 2013. A version of this has been adapted for use in Adobe Social, a social media marketing platform.  
*Key Technologies:* R, D3, Python, JavaScript, Apache Storm, Redis, HBase.
- Apr 11 – Oct 12 | Product Solution Developer, Adobe@Adobe, Adobe Systems, Bangalore, India & Ottawa, Canada

*About the team:* Adobe@Adobe is a young team consisting of a small group of people spread across different offices in key Adobe locations across the world. The team's charter is to create innovative solutions using Adobe's technologies to further its product boundaries.

*Roles and Responsibilities:* Created strategic technologies utilizing Adobe tools to push the boundaries of the technology and create innovative products for the market. The UNICOM project, where I developed the voice, IM, and other features, received interest from DISA, USA.

*Key Technologies:* Flash, HTML, CSS, JavaScript, C#.

Sep 07 – Apr 11

Web Engineer, Web Technology Group, Adobe Systems, Bangalore, India

*About the team:* The team has an established presence within Adobe, and is a key player in creating and maintaining Adobe's core digital asset: *adobe.com* and leverage the platform for Adobe's cloud strategy, which now encompasses three components, *Creative Cloud, Document Cloud and the Digital Marketing Cloud*

*Roles and Responsibilities:* Worked on Adobe's digital presence, on Adobe's Online Store transacting over a Billion US Dollars. Created platform technologies that have been used in Acrobat product families. My work has been credited and acknowledged in Acrobat X and subsequent Acrobat versions.

*Key Technologies:* HTML, CSS, JavaScript, ColdFusion, Flex, Flash.

## OTHER CONFERENCES/EVENTS

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A list of industrial, non-academic venues where I have been invited to discuss various topics on products, solutions, technology, and research.

EVENT	LOCATION	TOPIC
Fab(lab) Asia Network 2017	Kochi, IN	Panelist - "Connecting Art, Design & Digital Fabrication"
Hack the Visual 2015	London, UK	Hackathon Participant & Winner
UX India 2013	Bangalore, IN	Speaker - "Usability in Data Visualization"
Adobe Tech Summit 2013	San Jose, US	Speaker - "Adobe's Predictive Technologies"
Adobe Tech Summit 2011	San Jose, US	Speaker - "Introduction to Rapid Prototyping"
Adobe MAX 2011	Los Angeles, US	Speaker - "Adobe @ Adobe"

## PRODUCT SHOWCASE

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List of events where my work has been showcased, representing different organizations.

EVENT	LOCATION	ORGANIZATION
CES 2017	Las Vegas, NV	WebCardio (STMicro)
IoTWorld 2017	Santa Clara, CA	WebCardio
Cardiology Society(IN) 2016	Kochi, IN	WebCardio
IoTWorld 2016	Santa Clara, CA	WebCardio
Adobe DMS 2013	Salt Lake City, UT	Adobe Systems

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