

# Matthew Seita

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## EDUCATION

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**Rochester Institute of Technology (RIT)**, Rochester, New York, USA **2017 - Present**  
Ph.D. Computing and Information Sciences, **GPA: 4.00/4.00**  
Expected Graduation: **Fall 2022**  
Advisor: Dr. Matt Huenerfauth

**Rochester Institute of Technology (RIT)**, Rochester, New York, USA **Awarded 2017**  
M.S. in Computer Science, **GPA: 3.82/4.00**

**Rochester Institute of Technology (RIT)**, Rochester, New York, USA **Awarded 2017**  
B.S. in Computer Science, Minor in Mathematics, **GPA: 3.65/4.00**  
Honors: *magna cum laude*

## RESEARCH INTERESTS

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My research interests primarily lie in the areas of human-computer interaction and accessibility. My current focus is on how to better design automatic speech recognition technologies to facilitate communication between deaf and hard-of-hearing and hearing individuals. I have a computer science background and my secondary research interests include augmented and virtual reality and machine learning, including how AR/VR and ML can be applied to improve accessibility. I have hosted and led co-design activities, conducted interviews and experimental studies, and performed both qualitative and quantitative analysis of video recordings and speech data to support my dissertation research.

## FELLOWSHIPS

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**National Science Foundation Graduate Research Fellowship (NSF GRFP).** **2019 - 2022**  
Three-year full doctoral fellowship, valued at \$102,000 in stipends and \$36,000 in cost of education allowances to RIT.

## PEER-REVIEWED PUBLICATIONS IN CONFERENCE PROCEEDINGS

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[P.1] **Matthew Seita**, Sarah Andrew, and Matt Huenerfauth. 2021. "Deaf and Hard-of-Hearing Users' Preferences for Hearing Speakers' Behavior During Technology-Mediated In-Person and Remote Conversations," In Proceedings of the 18th International Web for All Conference (W4A '21). Association for Computing Machinery, New York, NY, USA, Article 25, 1–12.  
DOI:<https://doi.org/10.1145/3430263.3452430>

- [P.2] **Matthew Seita** and Matt Huenerfauth. 2020. "Deaf Individuals' Views on Speaking Behaviors of Hearing Peers when Using an Automatic Captioning App." In Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (CHI EA '20). Association for Computing Machinery, New York, NY, USA, 1–8. DOI:<https://doi.org/10.1145/3334480.3383083>
- [P.3] Oliver Alonzo, **Matthew Seita**, Abraham Glasser, and Matt Huenerfauth. 2020. "Automatic Text Simplification Tools for Deaf and Hard of Hearing Adults: Benefits of Lexical Simplification and Providing Users with Autonomy." In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20). Association for Computing Machinery, New York, NY, USA, 1–13. DOI:<https://doi.org/10.1145/3313831.3376563>
- [P.4] Larwan Berke, **Matthew Seita**, and Matt Huenerfauth. 2020. "Deaf and Hard-of-Hearing Users' Prioritization of Genres of Online Video Content Requiring Accurate Captions." In Proceedings of the 17th International Web for All Conference (W4A '20). Association for Computing Machinery, New York, NY, USA, Article 3, 1–12. DOI:<https://doi.org/10.1145/3371300.3383337>
- [P.5] Larwan Berke, Khaled Albusays, **Matthew Seita**, and Matt Huenerfauth. 2019. "Preferred Appearance of Captions Generated by Automatic Speech Recognition for Deaf and Hard-of-Hearing Viewers." In Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems (CHI EA '19). Association for Computing Machinery, New York, NY, USA, Paper LBW1713, 1–6. DOI:<https://doi.org/10.1145/3290607.3312921>
- [P.6] **Matthew Seita**, Khaled Albusays, Sushant Kafle, Michael Stinson, and Matt Huenerfauth. 2018. "Behavioral Changes in Speakers who are Automatically Captioned in Meetings with Deaf or Hard-of-Hearing Peers." In Proceedings of the 20th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '18). Association for Computing Machinery, New York, NY, USA, 68–80. DOI:<https://doi.org/10.1145/3234695.3236355>
- [P.7] Raja Kushalnagar, **Matthew Seita**, and Abraham Glasser. 2017. "Closed ASL Interpreting for Online Videos." In Proceedings of the 14th International Web for All Conference (W4A '17). Association for Computing Machinery, New York, NY, USA, Article 32, 1–4. DOI:<https://doi.org/10.1145/3058555.3058578>
- [P.8] Syed Kamran Haider, Masab Ahmad, Farrukh Hijaz, Astha Patni, Ethan Johnson, **Matthew Seita**, Omer Khan, Marten van Dijk, "M-MAP: Multi-factor memory authentication for secure embedded processors," 2015 33rd IEEE International Conference on Computer Design (ICCD), 2015, pp. 471-474, doi: 10.1109/ICCD.2015.7357151.

## BOOK CHAPTERS

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- [B.1] Utsav Shah., **Matthew Seita**, Matt Huenerfauth. (2019). "Evaluation of User-Interface Designs for Educational Feedback Software for ASL Students." In: Antona M., Stephanidis C. (eds) Universal Access in Human-Computer Interaction. Theory, Methods and Tools. HCII 2019. Lecture Notes in Computer Science, vol 11572. Springer, Cham. [https://doi.org/10.1007/978-3-030-23560-4\\_37](https://doi.org/10.1007/978-3-030-23560-4_37). *Peer-reviewed conference paper published as a book chapter.*

## POSTER AND OTHER PUBLICATIONS

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- [O.1] **Matthew Seita**. 2020. "Designing Automatic Speech Recognition Technologies to Improve Accessibility for Deaf and Hard-of-Hearing People in Small Group Meetings." In Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (CHI EA '20). Association for Computing Machinery, New York, NY, USA, 1–8.  
DOI:<https://doi.org/10.1145/3334480.3375039>. *Accepted as part of the CHI '20 Doctoral Consortium*.
- [O.2] Sushant Kafle, Abraham Glasser, Sedeeq Al-khazraji, Larwan Berke, **Matthew Seita**, and Matt Huenerfauth. 2020. "Artificial Intelligence Fairness In The Context of Accessibility Research on Intelligent Systems for People Who Are Deaf or Hard of Hearing." SIGACCESS Access. Comput., 125, Article 4 (October 2019), 1 pages. DOI:<https://doi.org/10.1145/3386296.3386300>.
- [O.3] **Matthew Seita**. 2017. "Multi-User Interactive Applications Using Augmented Reality on Mobile Devices." Rochester Institute of Technology. *Computer Science M.S. Project*.
- [O.4] **Matthew Seita**. 2016. "Closed ASL Interpreting for Online Videos." In Proceedings of the 18th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '16). Association for Computing Machinery, New York, NY, USA, 337–338.  
DOI:<https://doi.org/10.1145/2982142.2982147>. *Winner of the ASSETS '16 Undergraduate Student Research Competition (SRC)*.

## WORK EXPERIENCE

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### Graduate Research Assistant

**2017 - Present**

Rochester Institute of Technology, Rochester, New York

Conducted human-computer interaction and accessibility research. Also worked specifically on NSF Grant No. #1462280: Immediate Feedback to Support Learning American Sign Language through Multisensory Recognition, supervised by Dr. Matt Huenerfauth.

- Center for Accessibility and Inclusion Research (CAIR) <http://cair.rit.edu/>
- Linguistics and Assistive Technologies (LATLAB) <https://latlab.ist.rit.edu/>

### Graduate Research Assistant

**Summer 2017**

Rochester Institute of Technology, Rochester, New York

Was a graduate research assistant for the Research Experience for Undergraduates (REU) in Accessible Multimodal Interfaces and assisted REU students with their research projects. Additionally conducted some research on automatic sign language recognition software.

### Math Tutor

**Fall 2015**

Rochester Institute of Technology, Rochester, New York

Worked as a tutor in the learning center at the National Technical Institute for the Deaf at RIT. Assisted deaf and hard of hearing students with schoolwork in math subjects such as geometry and trigonometry.

## INVITED TALKS

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**Invited Panelist Speaker to discuss the NSF Graduate Research Fellowship Program** **2021**  
Spoke and gave advice to undergraduate research students who were participating in a Research Experience for Undergraduate Program at RIT regarding the NSF GRFP fellowship.

## PROFESSIONAL SERVICE

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**Reviewer (full-length conference papers) for ACM CHI Conference** **2020**

## TRAVEL GRANTS

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**Computing Research Association** **2019**  
CRA URMD Grad Cohort Workshop for Underrepresented Minorities and Persons with Disabilities in Waikoloa Village, Hawaii, USA

**Ninth International Deaf Academics & Research Conference** **2019**  
Conference in which Deaf researchers around the world network and congregate to discuss research, academia, and issues we face in academic environments.

**Center for Minorities and People with Disabilities in Information Technology / ACM** **2016**  
Presented research [O.4] at TAPIA '16: Richard Tapia Celebration of Diversity in Computing Conference in Austin, Texas, USA.

## AWARDS AND HONORS

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**First Place in the ASSETS '16 Undergraduate Student Research Competition** **2016**  
Research submission [O.4] came first place out of approximately 15 submissions. Awarded \$500.

## COMPUTING & INFO SCIENCE GRADUATE COURSES

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CSCI 621 - Database System Implementation  
CSCI 610 - Found of Computer Graphics  
CSCI 651 - Found of Computer Networks  
CSCI 664 - Computational Complexity  
CSCI 620 - Introduction to Big Data  
CSCI 642 - Secure Coding  
CSCI 654 - Found of Parallel Computing  
CSCI 715 - Apps in Virtual Reality  
CSCI 711 - Global Illumination  
CSCI 721 - Data Cleaning and Preparation  
CISC 810 - Research Foundations  
CISC 820 - Quantitative Foundations

HCIN 600 - Research Methods  
CISC 830 - Cyberinfrastructure Found  
HCIN 700 - Current Topics in HCI  
HCIN 730 - User-Centered Design Methods

## **EARLY RESEARCH EXPERIENCE**

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### **Research Experience for Undergraduates in Accessible Multimodal Interfaces Summer 2015**

Rochester Institute of Technology, Rochester, New York

One of ten interns selected from a nationwide applicant pool. Worked with Dr. Raja Kushalnagar to create a more deaf-friendly learning environment for online lectures, and to analyze its effectiveness.

### **Research Experience for Undergraduates in Trustable Computer Systems Summer 2014**

University of Connecticut, Storrs, Connecticut

One of ten interns selected from a nationwide applicant pool. Worked under Dr. Omer Khan and Dr. Marten van Dijk to create and test a software model of a Merkle Hash tree memory verification scheme.

### **Research Experience for Undergraduates in Imaging in the Physical Sciences Summer 2013**

Rochester Institute of Technology, Rochester, New York

One of six interns selected from over 220 applications submitted. Worked with faculty mentor Professor Dr. Jeff B. Pelz on automating the calibration procedure for mobile eye-trackers.

## **SKILLS**

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**Technical Skills:** Java, Python, C/C++, C#, R, HTML/CSS/JavaScript, MATLAB

**Languages Known:** Born Deaf and a native American Sign Language (ASL) user, English