

Thomas Manzini

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EDUCATION

Carnegie Mellon University, Pittsburgh, PA

MS - Language Technologies & Computer Science, 2018

Honors: CMU Research Fellowship

Awarded full tuition coverage & monthly stipend (2016 - 2018)

Teaching: Teaching Assistant Introduction to Deep Learning

Provided multiple guest lectures and managed grading for a 192 student class (2018)

CMU Data Science Seminar Speaker – Presented to 2019 CMU Data Science Seminar (2017)

Rensselaer Polytechnic Institute, Troy, NY

BS, Computer Science, *Cum Laude*, 2016

Honors: Stanley I. Landgraft '46 Award

Excellence in leadership and academic achievement (2016)

President, Upsilon Pi Epsilon Computer Science Honor Society (2014 - 2016)

Phalanx Senior Leadership Honor Society (2015 - 2016)

Dean's List (2012, 2013, 2014, 2015, 2016)

Teaching: RPI Science Ambassadors (2014 - 2016)

Selected to teach STEM topics to middle schoolers.

Undergraduate Teaching Assistant Introduction to Computer Science (2016)

Undergraduate Teaching Assistant Introduction to Algorithms (2013, 3 class sections in 2014)

Undergraduate Teaching Assistant Introduction to Open Source Software (2015 - 2016)

PUBLICATIONS

Manzini et al. "Toward Improving the Intelligibility of Black-Box Speech Synthesizers in Noise". *SPECOM '18*. Proceedings of the 20th conference on Speech and Computer. September 2018. **(Oral Presentation)**

Manzini, Chandu & Singh. "Language Informed Modeling of Code-Switched Text". *ACL '18*. Proceedings of the 56th conference of the Association of Computational Linguistics, Workshop on Computational Approaches to Linguistic Code-switching. July 2018. **(Poster Presentation)**

Manzini & Pham, et al. "Seq2Seq2Sentiment: Multimodal Sequence to Sequence Models for Sentiment Analysis". *ACL '18*. Proceedings of the 56th conference of the Association of Computational Linguistics, Workshop on Human Multimodal Language. July 2018. **(Oral Presentation)**

Prabhumoye, Botros, Chandu, Choudhary, Keni, Malaviya, **Manzini** et al. "Building CMU Magnus from User Feedback". *Alexa Prize '17*. In AWS re:INVENT 2017. November 2017. **(Paper)**

Manzini & Ravichander et al. "How Would You Say It? Eliciting Lexically Diverse Dialogue for Supervised Semantic Parsing". *SIGdial '17*. Proceedings of the 18th SIGdial Conference. August 2017. **(Poster Presentation)**

Manzini et al. "A Play on Words: Using Cognitive Computing as a Basis for AI Solvers in Word Puzzles". *Journal of Artificial General Intelligence*. Volume 6, Issue 1, Pages 111–129, December 2015. **(Paper)**

RESEARCH

Professor L.P. Morency, Carnegie Mellon University – Language Technologies Institute

Multi-Modal Sentiment Analysis (2017 - present)

- Developed novel neural architecture that achieves new state-of-the-art performance on multiple multi-modal sentiment analysis datasets (CMU-MOSI, ICT-MMMO, YouTube).
- Paper currently under review at AAAI 2019.

Professor Eric Nyberg, Carnegie Mellon University – Language Technologies Institute

Boeing: Smart Fault Isolation Manual (2017 - 2018)

- Mentored Boeing AI Development (AIMS) team members on best practices for search, question answering, and information retrieval systems.
- Constructed QA pipeline to recommend repair procedures based on user queries.

- Constructed sequence to sequence machine learning models to learn recommended maintenance actions based on reported faults in Boeing 787s.

DARPA: Data Driven Discovery of Models (summer 2017)

- Constructed dialog system to allow domain experts to interact with large scale datasets through dialog and data visualizations.

Bosch: Ubiquitous Personal Assistant (2016 - 2017)

- Constructed a semantic parsing methodology for the development of a ubiquitous dialog agent spanning multiple smart home appliances.
- Developed novel approach for collection of crowdsourced data for the construction of semantic parsers.

Professor Alan Black, Carnegie Mellon University – Language Technologies Institute

Toward Improving the Intelligibility of Black-Box Speech Synthesizers in Noise (2017 - 2018)

- Proposed, researched, and presented novel work for using language level features to improve the intelligibility of speech in noise.

CMU Magnus: Amazon Alexa Prize Team (2016 - 2017)

- Developed a social chatbot to engage users on Amazon's *Alexa* platform.
- Proposed and developed a community driven dialog module for automated question answering.
- Developed a dialog state transition model for managing dialog flow over predefined topics.

Professor James Hendler, Rensselaer Polytechnic Institute – Computer Science Department

Syllabus (2015 - 2016)

- Proposed, researched, and presented novel work involving using the *IBM Watson* pipeline and natural language processing to solve clues from Syllacrostic puzzles with >95% accuracy.

Debate Me (2016)

- Explored the effectiveness of “skip-thought” neural models for use in dialog agents.
- Collected and curated a corpus of presidential debate transcripts in order to train models.

Jeopardy! Reversed (2014 - 2015)

- Utilized NLP techniques to automatically generate *Jeopardy!* questions based on song lyrics.

Professor Mei Si, Rensselaer Polytechnic Institute – Cognitive Science Department

RPI Social Robotics (2013 - 2014)

- Developed an interactive dialogue driven campus tour guide for use on a *RoboKind Zeno* robot.

Lost Manuscript II (2013)

- Contributed to the development of an interactive story for players to practice Chinese speaking skills with virtual agents.

Professor Ananda Gunawardena, Carnegie Mellon University – School of Computer Science

Classroom Salon research project (summer 2011)

EMPLOYMENT

Microsoft, Cambridge, MA

Software Engineer, Microsoft AI Development Acceleration Program (summer 2018 - present)

- Currently exploring statistically learned representations for commands in the Microsoft Office platform for use in downstream machine learning models.

Pinterest, San Francisco, CA

Intern – Software Engineer, Ads Ranking Team (summer 2016)

- Developed an automated data workflow for processing large scale refunds for advertisers who are billed through both credit cards and invoices.
- Data workflow written in the Hive query language and Python executed on a MapReduce framework.

LinkedIn, Mountain View, CA

Intern – Software Engineer, Digits – Growth and Lifecycle Team (summer 2015)

- Developed backend Hadoop flow for phone collection splash screen and desktop banner.
- Developed parallelizable backend code in Java to map LinkedIn user names to phone numbers for name checking during an address book import.

Bloomberg L.P., New York, NY

Consultant – Software Engineer, Fixed Income & Relative Value/Search Team (fall 2014 - spring 2015)

- Invited to become part-time consultant to continue work following summer internship.

Intern – Software Engineer, Fixed Income & Relative Value/Search Team (summer 2014)

- Primary fixed income project selected for presentation to Bloomberg Co-Founder, Thomas Secunda.
- Secondary fixed income project selected for presentation to Michael Bloomberg.
- Developed Advanced Data Analysis, a pivot table toolset for performing “groupbys” and aggregations on all fixed income securities using Python and Cython.

Hover Inc., Los Altos, CA

Intern – Software Engineer, Prometheus Project (summer 2013)

- Developed heat-map based point cloud visualization module in Python.
- Translated code from C++ to Python for “Moneyshot” visualization.

MGM Resorts International, Las Vegas, NV

Intern – Software Engineer, Multi-Media Department (summer 2012)

Microsoft Innovation Center/Linq360, Las Vegas, NV

Intern – Information Technology Department (summer 2011)

VOLUNTEER & COMMUNITY SERVICE

CMU Masters Experience Council – School of Computer Science (2017 - 2018)

CMU Dean’s Masters Advisory Council – School of Computer Science (2016 - 2018)

Edgewood Fire Department, Pittsburgh, PA (2017 - 2018)

Carnegie Mellon University Emergency Medical Services, Pittsburgh, PA (2016 - 2018)

RPI Ambulance, Troy, NY (2012 - 2016)

Positions Held: Captain (Elected 2014 - 2016), Training Committee Chair (2014), Scheduling Coordinator (2012)

Ranks achieved: Crew Chief (Trainer), Driver (Trainer), Event EMS Supervisor, Duty Supervisor

Co-Founder, RPI Science Undergraduate Council (2015 - 2016)

President’s Lifetime Achievement Award (2015)

Awarded by President Obama for more than 4,000 hours of community service.

CERTIFICATIONS

SSI Stress and Rescue SCUBA Diver (2016 - ongoing)

PA Emergency Medical Technician–Basic (2017 - 2019)

NY Emergency Medical Technician–Basic (2013 - 2019)

VFIS Emergency Vehicle Operator Certification (2016 - 2019)

PA Hazardous Materials Technician Certification (2018 - ongoing)

Fire Fighter 1 Pro-Board, FPA 1001, Certification (2017 - ongoing)

AHA CPR for Basic Life Support for Healthcare Providers (2012 - 2019)