

Thomas Manzini

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EDUCATION

Carnegie Mellon University, Pittsburgh, PA

MS - Language Technologies (projected 2018)

Honors: CMU Research Fellowship – Awarded Tuition Coverage & Monthly Stipend (2016-present)
Selected to Dean's Masters Advisory Council – School of Computer Science (2016-present)
Selected to Masters Experience Council – School of Computer Science (2017-Present)

Rensselaer Polytechnic Institute, Troy, NY

BS - Computer Science, Cum Laude - 2016

Honors: *Stanley I. Landgraft '46 Award* – Excellence in leadership and academic achievement (2016)
Phalanx Senior Leadership Honor Society (2015-2016)
President, Upsilon Pi Epsilon Computer Science Honor Society, NY Eta Chapter (2014-2016)
Co-Founder, RPI Science Undergraduate Council (2015-2016)
Dean's List (2012, 2013, 2014, 2015, 2016)

RESEARCH EXPERIENCE

Prof. Eric Nyberg, Carnegie Mellon University – Language Technologies Institute, Pittsburgh, PA

Boeing: Smart Fault Isolation Manual (2017-present)

- Currently constructing 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)

- Research accepted for publication in *SIGdial '17*, June 2017.
- Constructed a semantic parsing methodology for the development of an ubiquitous dialog agent spanning multiple smart home appliances.
- Developed novel approach for collection of crowdsourced data for the construction of semantic parsers.

Prof. Alan Black, Carnegie Mellon University – Language Technologies Institute, Pittsburgh, PA

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 question answering module to perform automated general question answering.
- Developed a dialog state transition model for managing dialog flow over predefined topics.

Prof. James Hendler, Rensselaer Polytechnic Institute – Computer Science Dept., Troy, NY

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.

Syllabus (2015-2016)

- Research published in *Journal of Artificial General Intelligence*, December 2015.
- Proposed, researched, and presented work involving using the *IBM Watson* pipeline and natural language processing (NLP) techniques to solve clues from Syllacrostic puzzles at >95% accuracy.

Jeopardy! Reversed (2014-2015)

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

Prof. Mei Si, Rensselaer Polytechnic Institute – Cognitive Science Dept., Troy, NY

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.

Prof. Ananda Gunawardena, Carnegie Mellon University – School of Computer Science, Pittsburgh, PA

Classroom Salon research project (summer 2011)

PUBLICATIONS

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

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.

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.

EMPLOYMENT

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.

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, The 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)

TEACHING EXPERIENCE

Graduate Teaching Assistant: Deep Learning, Pittsburgh, PA (Starting Spring 2018)

Carnegie Mellon University: Data Science Seminar Speaker, Pittsburgh, PA (October 2017)

Rensselaer Polytechnic Institute: Science Ambassadors, Troy, NY (2014-2016)

Selected to present STEM topics to middle and high school students in the NY Capital Region.

Undergraduate Teaching Assistant: Introduction to Open Source Software, Troy, NY (Fall 2015, Spring 2016)

Undergraduate Teaching Assistant: Introduction to Computer Science, Troy, NY (Spring 2016)

Undergraduate Teaching Assistant: Introduction to Algorithms, Troy, NY (Fall 2013, Spring 2014, 2x Fall 2014)

VOLUNTEER & COMMUNITY SERVICE

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

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

Rensselaer Polytechnic Institute 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

President's Lifetime Achievement Award (2015) - Awarded by President Obama for over 4,000 hours service.

CERTIFICATIONS

SSI Stress and Rescue SCUBA Diver, Certification Number: 801196F4672433767323-US (Valid 2016-ongoing)

PA Emergency Medical Technician–Basic, Certification Number: 229502 (Valid 2017-2019)

NY Emergency Medical Technician–Basic, Certification Number: 407938 (Valid 2013-2019)

PA Fire Fighter 1-NFPA 1001, Certification Number: 22382 (Valid 2017-ongoing)

VFIS Emergency Vehicle Operator Certification (Valid 2016-2019)

AHA CPR for Basic Life Support Providers (Valid 2012-2018)