

Maeda F. Hanafi

HUMAN-CENTERED AI RESEARCHER | FULL-STACK SOFTWARE ENGINEER

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Education

Doctor of Philosophy (Ph.D.) in Computer Science

Sept. 2015 - May 2020

NEW YORK UNIVERSITY (NYU) - TANDON SCHOOL OF ENGINEERING

Brooklyn, New York

- Focus: Human-Centered Artificial Intelligence, Program Synthesis, Data Extraction, Human-Computer Interactions
- **Global Ph.D. Student Fellowship**, New York University - Abu Dhabi (NYUAD), United Arab Emirates — Fall 2015 to Spring 2020

Bachelor of Science (B.S.) in Computer Science, Cum Laude Award

Jan. 2010 - Dec. 2012

SOUTHERN CONNECTICUT STATE UNIVERSITY (SCSU)

New Haven, Connecticut

Technical Skills

Languages Java, Python, PostgreSQL, JavaScript, jQuery, D3.js, ReactJS, AngularJS, CSS, C#

Tools & Systems TensorFlow, MATLAB, Unity 3D, AWS, React Native, Android SDK, Spring MVC

Working Experience

Artificial Intelligence Intern

Summer 2020

CENTER FOR INNOVATION AND SECURITY SOLUTIONS, LOCKHEED MARTIN

Abu Dhabi, United Arab Emirates

- Trained and tuned generative adversarial networks (GANs) that generates high-quality image-based training data.
- Utilized state-of-the-art research methods for automatically labeling unlabeled large datasets, and cut down several weeks (~ max 9 weeks) of human labor of manually labeling training data.

Graduate Student Research Assistant

May 2014 - May 2020

HUMAN AND DATA INTERACTION LAB, NEW YORK UNIVERSITY - ABU DHABI

Abu Dhabi, United Arab Emirates

- **Texture**: Extraction Pipeline for PDF Documents by Structure Identification
 - Implemented AdaBoost algorithm, a machine learning meta-algorithm, in Java to improve the performance of user-developed heuristics that identify structures (titles, sections, lists, figures, tables) in PDF documents.

Ph.D. Research Intern

Summer 2017 and Summer 2015

IBM RESEARCH - ALMADEN

San Jose, California

- Collaborated with industry experts and researchers to solve several challenging problems in deployed data extraction pipelines.
- **SEER**: Auto-Generating Extraction Rules from User-Highlighted Texts
 - Designed and implemented **SEER** that automatically generates user-friendly extraction programs from user-highlighted text examples.
 - Conducted user study and proved **SEER** to reduce the time and manual effort of building and debugging extraction programs.
 - Deployed **SEER** to IBM's commercial data processing and analysis tool, **InfoSphere BigInsights**.
- **WhyFlow**: Automated Debugging Tool for Explaining Errors in Data Extraction Pipelines
 - Wrote a Java-based program synthesizer that generates user-friendly explanations of the data pipeline's errors.
 - Experimented and tested statistical methods for automatically debugging errors with Bayesian networks and inference.
 - Implemented the full stack architecture including integrating a PostgreSQL database to capture the pipeline's provenance data and implementing an interface and visualization with ReactJS, AngularJS, and D3.js.

Graduate Student Teaching Assistant

Sept. 2013 - May 2014

COMPUTER SCIENCE DEPARTMENT, SOUTHERN CONNECTICUT STATE UNIVERSITY

New Haven, Connecticut

- Graded and corrected student code from courses: Algorithm Design and Analysis, Java Programming, Multimedia Systems, Information Management and Productivity Software.
- Conducted tutoring sessions for Java programming.

Select Publications

- M. F. Hanafi, A. Abouzied, M. Danilevsky, and Y. Li. 2020. WhyFlow: Explaining Errors in Data Flows Interactively. In Proceedings of the Workshop on Data Science with Human in the Loop (DaSH 2020).
- M. F. Hanafi, M. Mannino, and A. Abouzied. 2019. A Collaborative Framework for Structure Identification over Print Documents. In Proceedings of the Workshop on Human-In-the-Loop Data Analytics (HILDA 2019).
- M. F. Hanafi, A. Abouzied, L. Chiticariu, and Y. Li. 2017. SEER: Auto-Generating Information Extraction Rules from User-Specified Examples. In Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (CHI 2017).

Awards and Media

- **National Society of Leadership and Success, Presidential Award**, Southern Connecticut State University. Spring 2013.
- **Teenager Due to Graduate from SCSU this Year**, 2012. ([Southern News](#))
- **Academic Excellency Award in Computer Science**, Honors Convocation, Southern Connecticut State University. Spring 2012.
- **13-Year-Old Connecticut Muslim Headed to University**, 2009. ([Fox News](#)) ([New Haven Register](#))
- **Distinguished Scholar Awards (\$12,000 scholarship)**, University of New Haven, West Haven, Connecticut. Fall 2009.