

Maeda F. Hanafi

FULL STACK SOFTWARE ENGINEER | JAVA AND D3.JS PROGRAMMER ENTHUSIAST

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Objective

Professional seeking a career in building full stack software solutions. Experienced with developing and testing human-in-the-loop, research prototypes using techniques in program synthesis, database systems, and human-computer interaction. Designed and developed automated tools to deal with challenges in data extraction and data analysis. Aiming to develop solutions in other contexts.

Qualifications Summary

Web Programming

- Implemented an intuitive interface with React.js and Angular.js for users to debug errors in a data extraction pipeline.
- Developed visualizations with d3.js of a data extraction pipeline and a data provenance graph.
- Designed and programmed an intuitive, jQuery-based interface for a non-technical user to specify automated data extraction tasks.

Back-End Experience

- Designed and programmed several Java-based back-end logic to facilitate automation in data tasks, including several program synthesizers.
- Developed an automated debugging tool for explaining errors in data extraction pipelines.

Database Integration

- Integrated PostgreSQL database to capture, store, and interactively handle the direct-acyclic graphical structure of a data provenance graph.
- Setup and integrated PostgreSQL database for storing ground-truth data and identified document structures to facilitate collaborative efforts across the user groups in the data extraction pipeline, i.e. end-users, annotators, developers.

Artificial Intelligence and Machine Learning Experience

- Programmed a Java-based artificial neural network that recognizes hand-written letters and implemented back-propagation algorithm to train the neural network.
- Experimented and tested methods for analyzing data errors with Bayesian networks and inference, Gibbs sampling, and other statistical approaches.
- 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.

Languages and Frameworks

Front-End JavaScript, jQuery, d3.js, React.js, Angular.js, node.js, SASS, CSS

Back-End Java, Python, SQL, PostgreSQL, Spring MVC

Working Experience

Graduate Student Research Assistant

May 2014 - May 2020

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

Abu Dhabi, United Arab Emirates

- Implemented full stack architecture of several automated data extraction tools.
- Presented several seminars and talks on data extraction tools.
- Published research papers in top conferences for computer science: Conference on Human Factors in Computing Systems (CHI) and International Conference on Management of Data (SIGMOD).

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.

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.

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: Program Synthesis, Data Extraction, Data Visualization, Human-in-the-loop Systems, 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

- 13-Year-Old Connecticut Muslim Headed to University. [Fox News](#). — 2009