

# Maeda F. Hanafi

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

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## Objective

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Professional seeking a career in the software industry. Experienced with developing full stack, research prototypes. Designed and developed automated tools to deal with challenges in data extraction. Aiming to develop solutions in other contexts.

## Qualifications Summary

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### 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

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

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

## Working Experience

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### 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

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### 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