Simon Zeng

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9 East 33rd St. Apt 916C, Baltimore, MD 21218

EDUCATION

Johns Hopkins University, Baltimore MD May 2020
Bloomberg Scholar
Majors: Computer Science, Cognitive Science | *Minor:* Applied Mathematics and Statistics
Focus: Natural Language Processing | *GPA/Major GPA:* 3.25/3.39

TECHNICAL SKILLS

Proficient in Java and Python (including TensorFlow, PyTorch, Matplotlib, NumPy, Pandas libraries)
Experience with C, C++, Android App Development, Web Development Tools/Frameworks:
Frontend: JavaScript (React.js) | *Backend:* MySQL, Node.js, Django

PROFESSIONAL EXPERIENCE

Visiting Researcher | Human Language Technology Center of Excellence | Baltimore MD May 2019 – August 2019
- Designed and constructed neural architectures for capturing document-level ontologies and contexts to use for improving named entity recognition results through multi-task learning.
- Explored entity discovery and classification in low resource situations (few-shot entity typing).
- Improved multi-label topic identification baseline F1 (accuracy) results by 0.33 in the Russian dataset and 0.35 in the Chinese datasets through conducting transfer learning on an NER task and using BERT embeddings.

Design Team Leader | Johns Hopkins University | Baltimore MD Aug 2018 – May 2019
Sponsor: Textron Systems
- Investigated the usage of hyperspectral imaging in food allergen detection to create a commercially viable product.
- Achieved 98% (binary) and 75% (multinomial) classification accuracy through utilizing machine learning and deep learning techniques to develop a pixel-by-pixel algorithm that determines the presence of major food allergens.
- Implemented a web application to calculate heatmaps of allergen probability distributions in given images to provide estimated allergen location.

Software Development Intern | Bloomberg School of Public Health | Baltimore MD May 2018 – Aug 2018
- Developed software utilized by the Epidemiology Department to aid in clinical data analysis and maintenance.
- Built and demonstrated prototypes of progressive web apps that address issues regarding data reliability and accuracy by minimizing manual data entry and improving client accessibility.

PROJECTS

Instagram Caption Generator | Data Analysis/AI Project (Python - PyTorch) June 2019 – Present
- Trained a series of neural models to generate captions given input images by using web-scraped Instagram data. Currently using a multi-stage pipeline that uses BPE embeddings through a transformer-CNN architecture.

Spotify Music Recommender | AI Project (Python) May 2019 – Present
- Created a music recommendation service that utilizes a user's age to create a baseline music taste from which similar songs can be found through using audio convolutional models and descriptive sentiment bucketing terms.

Musicify | Progressive Web App (React.js) January 2019 – Present
- Developed a web app that allows users to bond over music through sharing songs and customized lyric annotations. Currently utilizing the Spotify API to allow song search-up and the open-source Hypothes.is API for text annotation.

COMMUNITY INVOLVEMENT

Undergraduate Teaching Assistant | Johns Hopkins University | Baltimore MD Aug 2018 – Present
Courses: Intro Programming in Java, User Interfaces and Mobile Applications (Java/Android Development)
- Support courses through providing coursework feedback and reinforcing lecture material with students individually
- Act as scrum master and mentor for various groups as they develop their own Android applications. Provide both UI/UX feedback and implementation guidance as necessary.

EXTRACURRICULARS & OTHER INFORMATION

Extracurriculars: Undergraduate Admissions (*PR Staff*), Chinese Student Association (*Culinary Chair*), Club Tennis
Interests: Cooking (especially sushi), Baking, Bartending