

Alon Albalak

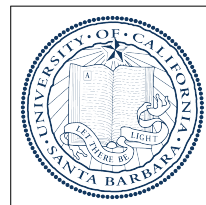
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About Me

I am a Ph.D student in the Computer Science Department at the University of California, Santa Barbara, co-advised by William Yang Wang and Xifeng Yan. My work lies at the intersection of natural language processing, machine learning, and logic. I mainly focus on low data settings such as zero-shot, few-shot, and transfer learning.

Education

2018–present **Ph.D, Computer Science**, *University of California, Santa Barbara*.

[UCSB NLP Group](#)

Advisors: [William Yang Wang](#) and [Xifeng Yan](#)

2016–2018 **B.S., Mathematics**, *Wayne State University*.

Publications

2021 **D-REX: Dialogue Relation Extraction with Explanations.**

[Alon Albalak](#), Varun Embar, Yi-Lin Tuan, Lise Getoor, William Yang Wang.

[ArXiv Preprint](#) [\[code\]](#)

2021 **Modeling Disclosive Transparency in NLP Application Descriptions.**

Michael Saxon, Sharon Levy, [Alon Albalak](#), Xinyi Wang, William Yang Wang

To appear in **EMNLP 2021 Main Conference**. [ArXiv Preprint](#)

2019 **The Sounds of Seizures: Audio-Triggered Detection by Convolutional Neural Network.**

Maysaa Basha, [Alon Albalak](#), Hani Alhourani, Aashit Shah, Ming Dong

[Published in Neurology](#)

2017 **Decoding User's Intention from Surface EEG Signals Using Machine Learning Algorithms.**

[Alon Albalak](#), Guanghua Xu, Chaoyang Chen, Ming Li, John M Cavanaugh

Annual Meeting of BMES (Poster)

Selected Projects

February 2021 – **Recommender Dialogue Systems**, *in collaboration with UCSC, USC, Google*.

- present
 - o Actively collaborating with researchers across institutions to solve problems in dialogue systems such as explainability, information extraction, and zero- or few-shot dialogue classification tasks
 - o Led a team in the design, development, and publication of state-of-the-art work on the explainability of relation extraction methods in dialogue
 - o Applied Probabilistic Soft Logic ([PSL](#)) to the task of emotion recognition in conversation to achieve state-of-the-art results

Advisors : Industry - [William W. Cohen](#) and [Tania Bedrax-Weiss](#)

Academic - [William Yang Wang \(UCSB\)](#), [Lise Getoor \(UCSC\)](#), and [Jay Pujara \(USC\)](#)

June 2021 – **Alexa Prize Taskbot Challenge, Team Lead.**

- present
 - o 8% acceptance rate
 - o Led and advised UCSB's "Team GauchoBot" in developing an agent that assists real Alexa customers to complete cooking and do-it-yourself projects that require multiple steps and complex decision making
 - o Designed algorithms for intent classification and question answering as well as the communication architecture between modules
 - o Extensively used AWS services including, but not limited to, EC2, ECS, ECR, S3, CloudWatch, DynamoDB, and Lambda

May 2021 – **COVID(ATAK), in collaboration with IARPA and Peraton Labs.**

- October 2021
- o Mentored a visiting undergraduate researcher
 - o Built a multilingual open-retrieval question answering system for COVID-related journal articles and a clinical trials database
 - o Designed and implemented:
 - a multilingual deep semantic indexing method to retrieve relevant documents
 - a multilingual reading comprehension system to find answers within a document
 - o Online demo will be available shortly

Professional Experience

June 2019 – **Research Associate, Theta Lake.**

- September 2020
- o Built classifiers for automated risk detection in regulated industries through the use of natural language processing and other machine learning techniques
 - o Took multiple projects from inception to production, and developed 2 patent pending methods along the way

December 2017 – **Machine Learning Research Associate, Machine Vision and Pattern Recognition Lab, Wayne State University.**

- September 2018
- o Research funded by the Epilepsy Foundation, titled "The Sound of Seizures"
 - o Built computer vision based CNN-LSTM model predicting the onset of seizures with 91% accuracy
 - o Optimized neural network in Keras/TensorFlow for portability to mobile devices

July 2016 – **Research Assistant, Robotic Rehabilitation and Neurophysiology Lab, Wayne State University.**

- July 2017
- o Custom built an arduino controlled lower limb exoskeleton
 - o Implemented neural network on motor cortex EEG data to control exoskeleton using python and matlab
 - o Built system to control a motorized wheelchair through EEG and EMG with a deep neural network

Fellowships & Awards

2018 **Integrative Graduate Education and Research Traineeship (IGERT) Fellow, University of California, Santa Barbara.**

2018 **Academic Excellence Fellowship, University of California, Santa Barbara.**

2018 **Chia Kuei Tsao Award, Wayne State University.**

For outstanding academic achievement in the undergraduate mathematics program

Technical skills

Tools Python, C++, Shell, AWS, Azure

Packages PyTorch, TensorFlow, Keras, NumPy, SciPy

Machine Learning Natural language processing (NLP), computer vision (CV), transformers, sequence to sequence models, statistical analysis, regression, clustering

Teaching Experience

Spring, 2020 **CS 165a: Artificial Intelligence - Lead TA.**

Fall 2020 – **CS 9: Object Oriented Programming.**

Spring 2021

Military Experience

- 2012 – 2015 **Reconnaissance Sabotage Unit**, *Israel Defense Forces*.
- o Engineering, demolitions, and reconnaissance specialty training
 - o Battalion lead navigator