Jeremy Irvin

jirvin16@cs.stanford.edu   jirvin16.github.io   linkedin.com/in/jirvin16
                                  github.com/jirvin16

Education	***Stanford***, M.S. Computer Science, 4.00/4.00 GPA	**Sep 2016 - June 2018**

Artificial Intelligence Track

UC Santa Barbara, B.S. Computer Science and B.S. Mathematics, 3.97/4.00 GPA   **2012 - June 2016**

College of Creative Studies (CCS)

Publications

- Rajpurkar, Pranav*, **Irvin, Jeremy***, et al. "CheXNet: Radiologist-Level Pneumonia Detection on Chest X-Rays with Deep Learning." *arXiv preprint arXiv:1711.05225*(2017). [JAMA submission in progress]

- Rajpurkar, Pranav*, **Irvin, Jeremy***, et al. "MURA Dataset: Towards Radiologist-Level Abnormality Detection in Musculoskeletal Radiographs." [in progress]

- **Irvin, Jeremy**, Daniel Spokoyny, and Fermín Moscoso del Prado Martín. "Dynamical systems modeling of the child–mother dyad: Causality between child-directed language complexity and language development." *Proceedings of the 38th Annual Conference of the Cognitive Science Society, Austin, TX.* 2016.

- Spokoyny, Daniel, **Jeremy Irvin**, and Fermín Moscoso del Prado Martín. "Explicit Causal Connections between the Acquisition of Linguistic Tiers: Evidence from Dynamical Systems Modeling." *ACL 2016* (2016): 73.

- Fermín Moscoso del Prado Martín, **Jeremy Irvin**, Daniel Spokoyny. The properties of children's language are caused by those of their mothers', and vice-versa [submitted to Nature Human Behavior].

- **Jeremy Irvin**, Fermín Moscoso del Prado Martín. Application of Dynamical Systems to Model Human Language Development. Undergraduate Thesis 2016.

* equal contribution

Research Roles

Research Assistant, Stanford   **January 2017 -**

Professor Andrew Ng

Research in the Stanford Machine Learning Group: `stanfordmlgroup.github.io`

- Deep Learning for Radiology with Professor Matthew Lungren   **September 2017 -**
  - Built models to perform pneumonia detection in frontal-view chest X-rays at the level of radiologists
  - Prepared datasets for public release and developed baseline models for abnormality detection in upper limb musculoskeletal X-rays

- Cardiotoxicity prediction with Memorial Sloan Kettering Cancer Center   **August 2017 -**
  - Using historical patient emergency medical record data to build a risk model of chemotherapy-induced cardiotoxicity in cancer patients

- Exploring alignment in convolution-based, character-level NMT   **January - April 2017**
  - Experimented with linear and attention-based alignment in convolutional, character-level language correction and neural machine translation

Research Assistant, UCSB   **September 2015 - June 2016**

Professor Fermín Moscoso

Undergraduate Senior Thesis

- Applied dynamical systems and causal modeling techniques to linguistic data (using Python and R) to understand the underlying complex nonlinear patterns of language development in children

- First author paper selected for a talk at *Cognitive Science*

- UCSB Undergrad Research Colloquium Best Humanities Research Prize Winner

Teaching	**Course Assistant,** Stanford	**Fall 2017**

`cs229.stanford.edu/`

- Teaching assistant for Stanford's machine learning course (CS229)
- Led weekly section covering external material
- Held numerous office hours and organized midterm logistics

Bootcamp Coorganizer, Stanford   **Fall 2017**

`stanfordmlgroup.github.io/projects/aihc-bootcamp-2017/`

- Coorganized a AI in healthcare bootcamp with Professor Andrew Ng and Professor Nigam Shah
- Designed the course material, preprocessed medical datasets, and prepared starter code

Co-lecturer, UCSB   **Winter 2016**

`computer-learning.github.io/class/`

- Co-taught a course on ML, NLP, and Deep Learning
- Led 15 course lectures throughout the quarter
- Created over 250 lecture slides

Industry   **Data Scientist Intern,** Microsoft   **Summer 2017**

Market Intelligence

- Trained deep learning intent classifier models using CNTK
- Built a large scale, unsupervised query embedding model to learn information-rich embeddings
- Improved market intellgience platform by integrating deep learning tools into the insights pipeline

Software Engineer Intern, Microsoft   **Summer 2016**

Bing Predicts

- Created a model to predict the MTV Video Music Awards's using Bing search and social data
- Wrote Python for scraping, feature engineering, model testing, and MART Gradient Boosting training
- Additionally implemented LSTM's for time series forecasting using Keras and CNTK

Software Engineer Intern, Microsoft   **Summer 2015**

Satori (Knowledge Graph) Within Bing

- Developed an algorithm to detect subtle entity relations in an immense ontology and rank them by novelty
- Wrote C# and internal query language as part of an R&D ML pipeline
- Increased run-time by two orders of magnitude, allowing for efficient discovery of the relations