Ivan Montero

Email : ivanspmontero@gmail.com
GitHub : github.com/ivanmontero
Mobile : 425-496-3342

Education

University of Washington — Seattle, WA
Bachelor of Science in Computer Science; *Major GPA: 3.93* — *Sept. 2017 – June 2021*
Masters of Science in Computer Science *(Beginning Sept. 2021)* — *Overall GPA: 3.90*

Skills

- **Languages**: Proficient in Python, Java, C++/C. Familiar with Bash, JavaScript.
- **Technologies**: PyTorch, TensorFlow/Keras, NumPy, MapReduce, UNIX/POSIX, OpenGL, Full Stack Web

Publications

- **Pivot Through English: Reliably Answering Multilingual Questions without Document Retrieval**
  ***Ivan Montero**, Shayne Longpre, Ni Lao, Andrew J. Frank, Christopher DuBois (preprint)*
- **Plug and Play Autoencoders for Conditional Text Generation**
  *Florian Mai, Nikolaos Pappas, **Ivan Montero**, Noah A. Smith, James Henderson (**EMNLP 2020**)*

Experience

- **Facebook** — Seattle, WA
  Software Engineering Intern – Visual Search Relevance — *Sept. 2020 - Dec. 2020*
  - **Image Understanding Improvements to Photo Search**: Improve image embedding representations by predicting relevant search queries and using Transformer self-attention blocks over ResNeXt101 representations.
- **Google** — Seattle, WA
  Software Engineering Intern – Machine Learning Research — *June 2020 - Sept. 2020*
  - **Embedding Retrieval Optimizations**: SIMD-optimized vector similarity routines and designed a hyperparameter search algorithm to learn the Pareto-optimal approximation tunings – balancing throughput and recall – of the embedding search tree for production-scale datasets, such as BERT in search, expediting deployment and efficiency.
- **Apple** — Seattle, WA
  NLP and Deep Learning Research Intern – Siri — *March 2020 - June 2020*
  - **Pivot Through English: Reliably Answering Multilingual Questions without Document Retrieval**: Perform research experiments on the most effective, unified manner to reliably transfer knowledge from English question answering systems to lower resource languages by leveraging multilingual paraphrase detection.
- **Google** — Kirkland, WA
  Software Engineering Intern – Ads — *June 2019 - Sept. 2019*
  - **Street View Billboard Detection And Physical Metric Inference**: Given a handful of reference images, use street view imagery to detect all company-specific billboards and infer their physical dimensions, orientation, and location. Used image feature similarity search and LiDAR information to train a TensorFlow detection model and perform evaluation on entire states. Improved billboard attention estimates, quantifying ad value, with a detection recall of 96% and average physical metric deviation of .6 meters from the ground truth.
- **University of Washington** — Seattle, WA
  Teaching Assistant – Paul G. Allen School for Computer Science and Engineering — *April 2019 - March 2020*
  - **CSE 446 - Machine Learning (Autumn 2019, Winter 2020)**: Lead multiple sections of 35 students on the theory and implementation of algorithms that learn from historical data and make inferences about future outcomes.
- **Google** — Mountain View, CA
  Engineering Practicum Intern – Image Understanding Research / Photos Machine Intelligence — *June 2018 - Sept. 2018*
  - **K-Nearest Neighbor Demo**: Improved a C++ web demo that extracts the image features and displays the most similar images and text queries by enabling detection model compatibility, allowing sub-image similarity searches.
  - **Data-Parallel Clustering Pipeline**: Engineered a pipeline in to produce image clusters from Google Photos through execution of several models in a concurrent, distributed manner on Google's servers.

Projects

- **Cash Hard All Day (CHAD) Bot**: Use transformer attention mechanisms and GPT-style pretraining to analyze stock prices over different timeframes, coupled with news headline sentiment analysis, to predict future trends.