Mohammad Parsa

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EDUCATION

University of California, Berkeley — **Berkeley, CA**
Ph.D. in Applied Science and Technology (GPA: 3.9) — *Expected: July 2026*
- Awards: NSF AI Research Resource Pilot Funding, UC Berkeley Entrance Scholarship ($30K), NSERC Grant ($80K/year for 3 years)

University of Waterloo — **Ontario, Canada**
M.Sc. in Management Sciences (GPA: 4) — *Graduated: August 2021*
- Awards:Ontario Graduate Scholarship ($15K), President's Graduate Scholarship ($5K), Aapoolcoyuz Biman Scholarship ($5K)

Iran University of Science and Technology — **Tehran, Iran**
B.Sc. in Industrial Engineering(GPA: 3.8) — *Graduated: July 2019*
- Awards: Top 0.5% in National Entry Exam (among 250K+ students), 7th place in national startup event

WORK EXPERIENCE

310.Ai — **San Francisco, CA**
AI/ML Scientist & Software Engineer — *(Part-time) May 2023 – Present*
- Developed and trained a protein language model on a dataset of 280 million protein sequences, generating phylogenetically valid trees, improving evolutionary relationship prediction accuracy by 15%.
- Collaborated with a team of 5 biologists and 3 data scientists to design deep learning models for protein engineering, reducing model training time by 20% through optimized workflows.
- Analyzed correlations between protein features and lifespan-related phenotypes across 500 species, identifying 3 key biomarkers linked to longevity.
- Supported protein foundation models and a conversational agent by preprocessing a dataset of 300 million protein structures, enhancing training efficiency by 25%.
- Trained 3 multimodal language models for protein design using a dataset of 170 million protein structures, improving prediction accuracy by 23%.
- Optimized transformer-based models, reducing inference time by 18% while maintaining performance across 5 key metrics.

Molecular Cell Biomechanics Laboratory, University of California, Berkeley — **Berkeley, CA**
Graduate Researcher & Teaching Assistant — *September 2021 - Present*
- Created a multi-modal benchmark for evaluating capabilities of 10+ protein language models.
- Developed **SIMBA**, a simulation-augmented **Heterogeneous Graph Neural Network (HeteroGNN)** integrating metabolic simulations with edge-aware attention, achieving Spearman $\rho = 0.85$ in microbial abundance prediction.
- Directed AI/ML projects, including NSP15 inhibitor prediction (screened 700 compounds, identifying 260 potential inhibitors) and single-cell RNA sequencing analysis of 1,000 cells.
- Architected a backbone diffusion neural network using VAEs, reducing protein structure prediction error by 10% on a test set of 3 million structures.
- Mentored 50+ students per semester across 3 courses (Principles & Techniques of Data Science, Coaching for High Performance Teams, Teaming & Project Management).

Data Science Lab, University of Waterloo — **Ontario, Canada**
Graduate Research Assistant (AI/ML Focus) & Teaching Assistant — *September 2019 – December 2021*
- Investigated information diffusion on a network of 1 million+ nodes, identifying key dynamics during the COVID-19 pandemic.
- Analyzed 5,000,000 social media posts using NLP, uncovering 20 insights into COVID-19's impact on mental health and academic integrity.
- Supported 100+ students per term across 3 courses (Big Data Analytics, Engineering Economics, Data Mining).

Management Information Systems Research Center, IUST — **Tehran, Iran**
Undergraduate Research Assistant (ML Focus) — *July 2016 – July 2019*
- Developed 5 machine learning algorithms to optimize pricing for 100+ medical tests, improving cost-efficiency by 15% across 30 clinical networks.
- Designed a Laboratory Information Management System (LIMS) data model, streamlining data management for 30 laboratories.

SKILLS & INTERESTS

Skills: Python, C++, Java, PyTorch, AWS, GCP, Git, Docker, SQL, OpenCV, Deep Learning, Protein Modeling, Data Visualization, Statistical Analysis, MLflow, Ray