Interos Inc., Arlington, VA

Jan 2020 - Present

Senior Machine Learning Engineer

- Built an Image Search Engine with an active learning component to detect logos of partners and subsidiaries available on company webpages. Implemented a web application Django, celery, and postgres – database with front-end written in bootstrap, jQuery, and JavaScript to build an interactive interface for the search engine
- Developed and implemented an entity linking algorithm using transformers to enhance the linking capabilities by 30% in the relational knowledge base using
- Developed joint learning frameworks to extract entity and events from news article for low resource problems
- Designed and developed feedback systems to monitor ML models' performance, detect concept drifts, and build training sets
- Developed and implemented relationship discovery system with enhanced application monitoring to extract business relationships from company homepages
- Designed and developed event-based system that captures signals generated within the platform based on risk score changes or user events to discover relationships from the company homepages

University of Maryland Baltimore County,

Baltimore, MD

Graduate Research Assistant (Under Dr. Francis Ferraro)

- Developed framework for building joint learning models to learn knowledge graph embedding and semantic type information.
- Evaluated the effectiveness of training knowledge graph embedding and fine grain entity types with language models
- · Researched and explored different training techniques to optimize the joint learning framework on classification and language modeling tasks

Data Scientist Intern

Interos Inc., Arlington, VA

- Built an intelligent product crawler tool that uses both unsupervised and supervised machine learning to learn the HTML structure of the webpage and identify the product names with 75% accuracy
- Created a pipeline to integrate the product crawler tool with the Interos knowledge base to enhance linking timelines by 85%

Graduate Research Assistant University of Maryland, School of Medicine, May 2018 - May 2019 (Under Dr. Shiming Yang) **Baltimore**, MD

- Explored deep learning-based techniques to predict the need for massive transfusion with 1st hours and first 24 hours post-trauma
- · Researched and built multi-task algorithms to study vital signs in trauma patients to predict various lifesaving interventions and discover feature level relationships
- Performed research to study the idea of combining dimensionality reduction with the nearest neighbor approach to represent the decomposed (short time fourier transform / continuous wavelet transform) PPG signal for predicting massive transfusion
- Build PPG signal datasets to predict outcomes Uncross-match blood (UnX), massive transfusion (MT), and critical administrative threshold (CAT)

Software Engineer

- Larsen & Toubro Infotech, Mumbai, India · Worked and collaborated with the cross-business unit teams in developing python libraries for robotic process automation applications
- · Programmed shell scripts for automating daily activities related to operating system and Database. Conducted research with an interdisciplinary team of the database, operating systems, and networking experts to optimize the performance of SAP data migration across data centers
- Worked with solution architects in designing end-to-end implementation and configuration of SAP applications in complex environments. Provided operational support to client SAP environment, devised strategies for integration of SAP Infrastructure with add-on non-SAP tools, developed performance tuning analysis to prioritize the changes in the client's SAP infrastructure to avoid application failure

TECHNICAL SKILLS

Programming Languages:	Python, Go, JavaScript, Shell Scripting, SQL
Frameworks & Technologies:	TensorFlow, PyTorch, NumPy, SciPy, FastAPI, Flask, Django, AWS Sagemaker, Kafka
Tools & Database:	Jupyter, Git, Visual Studio, PyCharm, Vim, MongoDB, SQLite, MySQL, Kubernetes, Docker

Aug 2019 – Dec 2019

Jun 2019 – Aug 2019

Jan 2015 – Jul 2017

LDUCATION		
Baltimore, MD	University of Maryland Baltimore County	Aug 2017 – Dec 2019
M.S. in Computer Science		
Coursework: Design & Analysis of	Algorithms, Advanced operating systems, Advanced Compu	ter Architecture, Machine
Learning, Natural Language Proce	essing, Information Retrieval, Data Science	
Kolhapur, India	Shivaji University	Aug 2010 – May 2014
B.E. in Electronics and Telecomm	unication Engineering	
Coursework: Data structure and	Algorithms, Digital Design, Microcontroller, Image Processing	, Embedded Systems

PUBLICATIONS

EDUCATION

On the Complementary Nature of Knowledge Graph Embeddings, Fine Grain Entity Types and Language modeling InProceedings, EMNLP Workshop on Deep Learning Inside Out, November 2020 (<u>link</u>) **PROJECTS**

Jointly Learning Knowledge Graph Embedding, Fine Grain Entity Type and Language Models – (Master's thesis) The deep learning framework model learned real-valued representations for structured facts from a knowledge graph in form of embeddings. The multi-task learning framework helped improved performance on downstream NLP applications **Combining Image Recognition with Knowledge graph Embedding for Learning Semantic Attributes of Images** Developed a joint learning model to learn images along with detected captioned entities attribute to learn the semantic relationships between them through the knowledge graph embedding model

PPGNET: Massive Transfusion Predictor for Trauma Patients:

PPGNet is a deep learning model which can assist in automatic feature extraction from first 15 mins of PPG records of trauma patients to detect the need of transfusion within first 24 hrs.