Fatemeh Shiri

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Current position: Research Fellow at Monash University

Overview

As an ambitious and determined professional, my ultimate goal is to build a strong research and teaching portfolio in the field of data science. With a strong foundation in computer vision, Natural Language Processing (NLP), Generative AI, including large language models (LLMs), I possess the expertise to develop cutting-edge predictive and generative algorithms on both extensive datasets and in low-resource situations. Throughout my academic and industry journey, I have gained valuable insights that I am eager to leverage in obtaining research and industry grants, developing teaching content and providing service.

Professional Highlights

- Strong background in Generative AI, NLP, computer vision, LLMs and machine learning.

- Experienced in using LLMs for QA system, Knowledge base Construction and Information extraction.
- Project Manager, ABC Company
- Successfully contributed to the writing and submission of project proposals for industry collaborations (e.g., Computational Cultural Understanding (CCU)- 2.5m USD and Assured Neuro Symbolic Learning and Reasoning (ANSR)1.2m USD).

- Experienced in using Python, Lua, C++, SQL, Matlab on different environments (e.g. Windows & Linux).

- Experienced in using version control: Git, GitHub, GitLab, Bitbucket, Docker

- Experience working with cloud providers, MS Azure, Google Cloud Platform and Amazon Web Services environments.

- Provided training courses on data science for industry professionals.

- Developed skills in research project management, analysing and providing recommendations via current technologies (e.g. Notion, Tableau, RapidMiner, Power BI).

- Ten years of experience in delivering ICT projects including working with vendors to develop product management, providing services in response to customer requirements.

- Ability to elicit clear requirements and communicate effectively with technical and non-technical audiences.
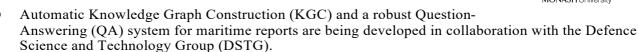
Education

- **PhD** in **Computer Science,** Australian National University, Nov 2015 - Jan 2020
- **M.Sc.** in **Engineering & Computer Science,** Tarbiat Modares University, Sep 2008 - Mar 2011
- **Bachelor of Electrical Engineering-Electronics,** Razi University, Iran, Sep 2001 - Nov 2005

Experience

Research Fellow & Project manager

Monash University, Faculty of Information Technology
Date: Jul 2020 – now

- Automatic Knowledge Graph Construction (KGC) and a robust Question-Answering (QA) system for maritime reports are being developed in collaboration with the Defence Science and Technology Group (DSTG).

- Automatic Knowledge Base Completion for the Sexual and Gender-based Violence (SGBV) project in collaboration with the Centre of Excellence for the Elimination of Violence Against Women (CEVAW).
- Document-level Information Extraction.
- Domain-Adaptive Event Extraction from Multimodal Sources using LLMs.
- Speech-based Event Extraction using Generative AI.
- Detect, disrupt, and prevent insider threats and attacks using NLP techniques in collaboration with the Department of Software Systems & Cybersecurity.
- Contribution in writing proposal for industry projects (e.g., DARPA and DSTG)
- Project manager of two industry projects: DARPA-CCU (Phase 1) and DARPA-ANSR (phase 1)

Sessional Lecturer & Research Fellow

Deakin University

Date: Feb 2020 – Sep 2020

- Developing an AI framework (using Deep Learning) for Stock Market Portfolio Management.
- Provided supervision and consultation for students in Unit MIS779, "Decision Analytics in Practice", Master of Business Analytics.
- Conducting Python programming labs for Unit MIS780 "Advanced Artificial Intelligence for Business".
- Conducting Microsoft Azure labs for Units MIS715 "Advanced Artificial Intelligence for Accounting and Finance" and Unit MIS373 "Advanced Artificial Intelligence for Business".

Data Science Trainer

DataSmelly

Date: Sep 2018 – Now

- Conducted training courses (www.datasmelly.com) on data science and machine learning for industry professionals.

Data Scientist

BARD AI.

Date: Mar 2020 – March 2021

- Delivered decision support and analytics to a wide variety of problems for the Department of Transportation (DoT) using Bayesian Networks and other machine learning approaches.
- Conducted data analytics to understand the patterns of public transport usage, including utilisation and forecasting of future transport consumption.

PhD research scholar

Australian National University

Date: Nov 2015 - Jan 2020

Contributions:

- Developing computer vision and machine learning algorithms for photorealistic face recovery from portraits using generative adversarial networks (GANs).
- Presenting a Convolutional Neural Network (CNN) method which jointly upsamples and frontalizes very low-resolution unaligned face images in an end-to-end fashion.

Product Manager

RFI Technology Solutions

Date: Jan 2018 – April 2019

Responsibilities:

- Collaborated with multiple departments (e.g. engineering, marketing, manufacturing and operations) and companies (e.g. Optus, Motorola, Telstra). The aim was to develop and manufacture products in response to customer needs and market opportunities.
- Supported the design and development components of RF antennas. These include requirements elicitation, planning, overseeing release.
- Involved in project management: tracking and managing budgets, reviewing metrics, coordinating between teams, and escalating issues.

- Assist in tracking and reporting product performance throughout its lifecycle including product strategy, product planning and enhancement/issue prioritization.
- Experienced in using NetSuite and inventory management software, to obtain an in-depth real-time view of supplier, inventory and procurement indicators.

Product & Solution Manager

Huawei Enterprise
Date: Jan 2014 - Nov 2015

Responsibilities:
- Focus on product analysis including how they work and their application in solving client problems (in rail, automotive and steel industries).
- Regular collaboration with customers to identify requirements leading to effective design and prevention of solutions.
- Liaise between internal teams, external vendors and clients to ensure effective and smooth delivery of ICT projects.
- Identified key projects through consultation with clients.
- Allocated resources and managed projects, including their handover.
- Successfully completed telecommunication projects including IP and TDM base SDH networks and Radio Networks.
- Experienced working with backbone Huawei transmission technologies.
- Hands-on experience in bid engineering, analysis, risk management, writing technical proposal and pre-sales activities.

Project Engineer

Tait Radio Communications
Date: Dec 2005-Dec 2013

Responsibilities:

- Extensive experience in installation, commissioning, troubleshooting and maintenance of TAIT Radio Networks.
- Identified requirements and presented radio solutions with compelling technical proposals detailing product delivery, services and applications.
- Gathered customer requirements and designed new networks.
- Provided pre-sale, design, installation and configuration documents for engineers and sales teams.
- Managed phases of project development, including requirements analysis, system design, specification, development, implementation and maintenance.
- Provided timely and accurate supervision, support for the project and O&M team.
- links to the industry, Managed contractor/supplier invoicing and payments.

Selected Publications

- F.Moghimifar, **F.Shiri**, R.Haffari, YF.Li, V.Nguyen, "Few-shot Domain-Adaptive Visually-fused Event Detection from Text", Conference on Information Fusion (FUSION), 2023.
- B.Akhlaghi, H.Farzanehfard, D.Thiruvady, R.Faraji, **F.Shiri**, "ZVT Interleaved High Step-Up Converter For Renewable Energy Systems", 14th Power Electronics, Drive Systems, and Technologies Conference (PEDSTC), 2023
- BP.Voutharoja, L.Qu, **F.Shiri** ,"Language Independent Neuro-Symbolic Semantic Parsing for Form Understanding", Submitted to (ICDAR) 2023.
- F.Moghimifar, **F.Shiri**, V.Nguyen, G.Haffari and YF.Li, "Weakly Supervised Multimodal Event Extraction from Incomplete", Submitted to AACL 2023.
- K.Xie, L.Qu, **F.Shiri** and W.Wang, "A Survey on Document-Level Event Extraction", Submitted to EMNLP 2023.
- T. Zhuo. Z.Li, Y.Huang, YF.Li , W. Wang , G. Haffari, **F.Shiri**. "On Robustness of Prompt-based Semantic Parsing with Large Pre-trained Language Model: An Empirical Study on Codex.", accepted to EACL, 2023.
- T.Wu, **F.Shiri**, R.Haffari, YF.Li, "KC-GEE: Knowledge-based Conditioning for Generative Event Extraction", submitted to the journal of World Wide Web, October 2022.
- **F.Shiri**, T.Wu, R.Haffari, YF.Li, "TCG-Event: Effective Task Conditioning for Generation-based Event Extraction", The 20th Annual Workshop of the Australasian Language Technology Association, 2022.

- D.Thiruvady, S.Nguyen, Y.Sun, **F.Shiri**, N.Zaidi, X.Li, "Adaptive Population-based Simulated Annealing for Uncertain Resource Constrained Job Scheduling", the International Journal of Production Research, 2022.
- **F.Shiri**, TY.Zhuo, Z.Li, S.Pan, W.Wang, R.Haffari, YF.Li, V.Nguyen, "Paraphrasing Techniques for Maritime QA system" , Conference on Information Fusion (FUSION), 2022.
- **F.Shiri**, V.Nguyen, S.Yu, T.Wang, S.Pan, X.Chang, YF.Li, R.Haffari, "Toward the Automated Construction of Probabilistic Knowledge Graphs for the Maritime Domain" , Conference on Information Fusion (FUSION), 2021.
- D.Thiruvady, S.Nguyen, **F.Shiri**, N.Zaidi, X.Li, "Surrogate-assisted Population Based ACO for Resource Constrained Job Scheduling with Uncertainty.", the Journal of Swarm and Evolutionary Computation, Jan 2022.
- **F.Shiri**, X.Yu, F.Porikli, R.Hartley, P.Koniusz, "Identity-Preserving Face Recovery from Stylized Portraits", International Journal of Computer Vision, 127 (6-7), 2019, Volume 127: 863–883.
- X.Yu, **F.Shiri**, B.Ghanem, F.Porikli, "Can we see more? joint frontalization and hallucination of unaligned tiny faces", IEEE transactions on pattern analysis and machine intelligence, 2019, 14: 1-17.
- **F.Shiri**, X.Yu, F.Porikli, R.Hartley, P.Koniusz, "Identity-preserving Face Recovery from Portraits", IEEE Winter Conference on Applications of Computer Vision (WACV), 2018, 102-111.
- **F.Shiri**, X.Yu, F.Porikli, R.Hartley, P.Koniusz, "Recovering faces from portraits with auxiliary facial attributes", IEEE Winter Conference on Applications of Computer Vision (WACV), 2019, 406-415.
- **F.Shiri**, X.Yu, P.Koniusz, F.Porikli, "Face Destylization", International Conference on Digital Image Computing: Techniques and Applications (DICTA), 2017, 1-8.
- D.Giveki, A.Soltanshahi, **F.Shiri**, H.Tarrah, "A new content based image retrieval model based on wavelet transform", Journal of Computer and Communications, 2015, 3:66-73.

Complete list of publications: https://scholar.google.com/citations?user=3bHV6bsAAAAJ&hl=en

Academic Awards & Activities

- Early Career Academic (ECA) Travel Grant, Monash University 2023
- Peer Reviewer: IEEE TIP, MVAP, WACV
- HDR Fee Remission Merit Scholarship, Government of Australia (Nov2015-Jan2020)
- ANU PhD Scholarship (International Students), Government of Australia (Nov2015-Jan2020)
- Data61/CSIRO top-up scholarship
- Member of Australian Centre for Robotic Vision
- Volunteer member of Go Girl, Go IT 2020 https://www.gogirl.org.au/
- Volunteer Students at International Conference on Machine Learning (ICML)
- Volunteer Students at European Conference on Computer Vision (ECCV)
- IEEE student Member, IEEE Communication Society member.
- Member of Iranian Society of Machine Vision and Image Processing (ISMVIP)
- Ranked the top 0.3% applicants in the university entrance exam for BSc in Iran (2001)
- Ranked the top 0.5% applicants in the university entrance exam for MSc in Iran (2008)

Additional Information

- Residency: Australian Citizen
- Languages: English, Persian, Spanish, Kurdish

References

- **A/Prof Yuan-Fang Li**
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