Jamshid Bacha

MS in Computer Information System and Networks

Introduction

I am well versed in all aspects of Artificial Intelligence, Computer Vision, and Natural Language Processing, which I have gained from +4 years of experience. I have strong skills in Python, PyTorch, C/C++, MATLAB, JAVA, Django, PHP, Node.js, JQuery, and Flutter.

Professional Experience

05/2023- Present **Computer Engineer**, *Technische Universität Berlin, Germany*.
- Researcher in Reinforcement Learning (RL)
- Developed an RL-based Framework for ultra-dense Wi-Fi Interference Optimization
- Developed an AI-based Python Simulator for Wi-Fi 8
- **Tools and Algorithms:** Python, PyTorch, RL, NS-3
- [Online], [Lab Link]

03/2021- 03/2023 **Research Engineer (AI)**, *Korea Aerospace University, South Korea*.
- Researcher in Artificial Intelligence
- Developed a Deep Learning (Computer Vision) based Framework for Offensive Text Detection in Unstructured Data for Heterogeneous Social Media
- Developed an AI-based Mobile App to Control the Spread of COVID
- **Tools and Algorithms:** Python, BiLSTM, LSTM, Conv1D, BERT, Computer Vision, YOLO, TensorFlow, PyTorch
- [Experience Certificate], [Lab Link]

09/2020- 02/2021 **Lab Engineer**, *Institute of Management Science, Pakistan*.
- Conducted Labs at the Undergraduate Level
- **Tools and Algorithms:** C/C++, Packet Tracer, OPNET, Wireshark, Data Communication and Networks
- [Experience Certificate] , [University Link]

02/2020- 08/2020 **Internship**, *AntoX (Private) Limited, Peshawar, Pakistan*.
- Flutter App Development
- Python Development
- **Tools and Algorithms:** Flutter, Python
- [Experience Certificate]

06/2019- 09/2019 **Internship**, *IoTics Technology PVT LTD, Pakistan*.
- US-Pakistan Centre for Advanced Studies in Energy
- Designed and Implemented of Smart Control for a Photovoltaic System
- Developed Communication of Wi-Fi, Bluetooth Module with Mobile App and Cloud
- **Tools and Algorithms:** C/C++, Flutter, SPI, I2C, UART, Python
- [Experience Certificate]

– Berlin, Germany
+491728217842 • jamshidbacha724@gmail.com • Jamshid Bacha

Education

03/2021-03/2023 **MS**, *Computer Information Systems and Networks*, **Korea Aerospace University**,South Korea.

- Deep Learning
- Machine Learning
- Parallel Computing
- Metaverse Technology
- **Thesis Title:** A Deep Learning-based Framework for Offensive Text Detection in Unstructured Data for Heterogeneous Social Media
- *GPA - 4.19/4.5*, [Presentation], [Transcript]

09/2016-09/2020 **BS**, *Computer Systems Engineering* , **University of Engineering & Technology**, Pakistan.

- C/C++
- Web Engineering
- Computer Security
- Data Structure & Algorithms
- Data Communication and Networks
- **Thesis Title:** Design and Implementation of Smart Control for a Photovoltaic System
- *GPA - 3.60/4.0*, [Presentation], [Transcript]

Work Experience

Leading research on applying Machine Learning and Deep Learning techniques to networking..

- Research by following updates via channels such as LinkedIn, Arxiv, and conferences such as GLOBECOM, INFOCOM, IEEE Journals, and Elsevier.
- Developed a deep learning-based framework for interference optimization in futur Wi-Fi
- Python, PyTorch, AI, RL [RL Code]

Forensic Engine and Plug-in for Cyberbullying-Free HSN Leveraging Deep Learning.

- Worked on a cyberbully-free social network
- Developed a deep learning-based framework using unstructured data (Text and Images) for heterogeneous social media
- Sentiment Analysis, NLP, YOLO, MobileNet, BERT, BiLSTM, and Python [NLP Code]

Social Network Ranking and Profile Modeling Software.

- Developed an SN ranking software based on followers/following tweets
- Profile modeling based on cyberbullies via DL, NLP, NodeJS, and Flutter [Mobile App],[Server Code],[AI Code]

COVID-19 Social Distancing Software (ENG & KWR Version) .

- Developed a mobile sensors-based platform for COVID-19 contact tracing
- Machine Learning, Flutter, NodeJS, PostgreSQL [Mobile App], [Server Code]

COVID-19 User and Patient Analysis and Tree/Network Chain Modeling .

- Implemented a website of tree and networks from patient to normal users
- Performed the early detection and prevention of normal users to COVID patients via notification systems
- JavaScript, HTML5, Bootstrap, NodeJS, D3.js [Website]

Advanced Encryption Standard (AES), ECB & CBC Mode.

- Implemented the encryption and decryption for image and text based on C++, OpenCV, [Github]

Laravel and PHP based mini Social Network Website.

- A mini Facebook for class friends
- Login, Register, Profile, Message, Password Change in Setting functionalities
- Laravel, PHP, HTML, Bootstrap, JavaScript, JQuery, Database [Laravel and PHP],[Web Demo Video]

PHP based Social Network Website.

- A mini Facebook for class friends
- Login, Register, Profile, Outbox, Inbox, Password Change in Setting functionalities
- PHP, HTML, Bootstrap, JavaScript, Database [PHP],[Web Demo Video]

School Bus Tracking System.

- Developed a school bus tracking and alert system for the guardian
- React Native [Mobile App]

Research Publications

Journals, *Published*.

1. **Bacha Jamshid**, Anatolij Zubow, Szymon Szott, Katarzyna Kosek Szott, Falko Dressler. "Deep reinforcement learning based interference optimization for coordinated beamforming in ultra-dense WiFi networks" [Computer Communications IF: 4.3], (SCIE).
2. **Bacha Jamshid**, Farman Ullah, Jebran Khan, and Sungchang Lee. "A Deep Learning-Based Framework for Offensive Text Detection in Unstructured Data for Heterogeneous Social Media" [IEEE Access IF: 3.9], (SCIE).
3. **Bacha Jamshid**, Jebran Khan, Abdul Wasay, Ullah Farman, Junaid Iqbal. and Sungchang Lee. " Mobile Sensors based Platform for COVID-19 Contact Tracing Leveraging Artificial Intelligence [Journal of Ambient Intelligence and Humanized Computing IF: 3.66], (SCIE).
4. Sardar Abdul, Ullah Farman, **Bacha Jamshid**, Khan Jebran, Ali Furqan, and Sungchang Lee. "Mobile sensors based platform of Human Physical Activities Recognition for COVID-19 pandemic spread minimization." [Computers in Biology and Medicine IF: 6.698], (SCIE).
5. Khan Junaid, Jebran Khan, Furqan Ali, Farman Ullah, **Bacha Jamshid**, and Sungchang Lee. "Artificial Intelligence and Internet of Things (AI-IoT) Technologies in Response to COVID-19 Pandemic: A Systematic Review." [IEEE Access IF: 3.367], (SCIE).

Conferences.

1. **Bacha Jamshid**, Anaolij Zubow, Falko Dressler. "Multi-Agent Reinforcement Learning Approach for Interference Optimization in Wi-Fi 8" [IEEE Middle East Conference on Communications and Networking], 2025 being held at 03-06 November 2025, Egypt.
2. Najeeb Uddin, **Jamshid Bacha**, Amjid Zia "Review on different techniques used for increasing the efficiency of Solar System", [6th Students Review Paper Conference], 2019 being held at 19-20 June 2019, Pakistan

Areas Of Interest

- Machine Learning
- Computer Vision
- Internet of Things
- Human Computer Interaction

Awards and Distinctions

- Fully Funded MS Scholarship at Korea Aerospace University, South Korea
- Graduated among top 10 (4th position) of 2020 batch at Department of Computer Systems Engineering, UET Peshawar, Pakistan
- Laptop Awarded, Prime Minister Pakistan Program, Peshawar, Pakistan.

Project Proposal Experience

Successful.

- Project Proposal for Korea Research on Cyberbully Forensic Engine 2022
  - Title: Research on Cyberbully Forensic Engine and Plug-in for Cyberbully-Free Heterogeneous Social Networks leveraging Deep Learning
  - Fund: 50 Million KRW per year through NRF
  - Duration: June 2022 - June 2025

Project Participation

National Research Foundation (NRF).

- Research on Cyberbully Forensic Engine and Plug-in for Cyberbully-Free Heterogeneous Social Networks leveraging Deep Learning
  - Fund: 50 Million KRW per year through NRF
  - Duration: June 2022 - June 2025

National Research Foundation (NRF).

- Research on Epidemics Contact Tracing, Prediction, and Prevention Leveraging Artificial Intelligence focusing on COVID-19
  - Fund: 162 Million KRW per year through NRF and 150 SEK through VR (Sweden)
  - Duration: December 2020 - January 2022

US-Pakistan Centre for Advanced Studies in Energy.

- Designed and Implemented a Smart Control for a Photovoltaic System. Worked with highly skilled team members to build this project [Embedded System and IoT]
  - Fund: 60 Million KRW per Year
  - Duration: September 2018 - August 2020

Certifications

2020 Data Analysis with Python from IBM through [Coursera]

2020 Tools for Data Science [Coursera]

2018 Java Programming: Solving Problems with Software[Coursera]

Academic Skills

Artificial Intelligence tools and Algorithms: .

Random Forest, CNN, LSTM, RNN, SVM, Python, PyTorch, R, MATLAB, TensorFlow, Scikit-Learn, D3.js, RapidMiner

Theoretical knowledge and competencies.

During my research and teaching, I have a good understanding of concepts related to Machine Learning, Natural Language Processing, Computer Vision, and Image Processing

Social Skills.

Good at making new friends, adjustment with new teammates by studying in a multinational environment and interaction with people of diverse ethnicity and nations

Languages

English:	Official/Academic Language	*(Advanced level speaking, reading and writing skills)*
Korean:	Learning in Korea since 2021	*(Beginner)*
Urdu:	National/Official Language	*(Advanced level speaking, reading and writing skills)*
Pashto:	Native Language	*(Advanced level speaking, reading and writing skills)*
Hindi:	Learning	*(Intermediate level speaking, Low level reading and writing skills)*

References

Prof. Dr.-Ing. habil. Falko Dressler,

- Professor at Technische Universität Berlin, Germany
- Email: **dressler@ccs-labs.org**

Prof. Dr. Sungchang Lee,

- Professor at Korea Aerospace University, South Korea
- Email: **sclee@kau.ac.kr**