# Bahar Amirian Varnousefaderani

Daegu, South Korea | bahar.am.va@gmail.com | (+82) 010-2185-3617
linkedin.com/in/baharamirianv | baharav.github.io | github.com/BaharAV

## Education

**Kyungpook National University, Daegu, South Korea** Sept 2023 – July 2025
MS in Computer Science and Engineering

- Current CGPA: 4.3/4.3
- Funded by the Global Korea Scholarship (*GKS-G 2022*)
- **Relevant coursework:** Machine Learning, Pattern Recognition, Artificial Intelligence Applications

**Chungnam National University, Daejeon, South Korea** Sept 2022 – Sept 2023
Korean Language Program (Level 4 to 7 (last))

- Funded by the Global Korea Scholarship (*GKS-G 2022*)

**Shahid Beheshti University, Tehran, Iran**
Some MS Courses in Computer Engineering (Artificial Intelligence and Robotics) Sept 2021 – July 2022

- CGPA: 18.43/20
- Funded by the Government of Iran (*Direct Entry through the Exceptional Talent Quota*)
- **Relevant coursework:** Natural Language Processing, Image Processing, Computer Vision, Deep Learning

**Shahid Beheshti University, Tehran, Iran**
BS in Computer Engineering Sept 2017 – July 2021

- CGPA: 18.3/20
- Funded by the Government of Iran (*Top 1% in Nationwide University Entrance Exam*)
- **Relevant coursework:** Fundamentals of Computer Vision, Fundamentals of Computational Intelligence, Artificial Intelligence and Expert Systems, Fundamentals of Robotics

## Experience

**Graduate Student Researcher** Sept 2023 – July 2025
Multimedia Information Processing Laboratory of Kyungpook National University, Daegu, South Korea

- Under the supervision of Prof. Jeonghong Kim
- Leading academic and industrial projects across various aspects of AI.

**Graduate Teaching Assistant** Sept 2023 – July 2025
Kyungpook National University, Daegu, South Korea

- **Course:** Data Structure
- Guiding classes of 30+ students and assisting in grading assignments and exams, mentoring students, and class management.

**BS Thesis and Junior Graduate Student Researcher** Jan 2021 – July 2022
Shahid Beheshti University, Tehran, Iran

- Under the supervision of Prof. Mohsen Ebrahimi Moghaddam
- BS Thesis: Design and Implementation of an AI-Powered Image Description System for Mobile Devices
- Developed foundational research skills in computer vision and natural language processing through work on image captioning-related projects.
- Gained hands-on experience with deep learning frameworks and model evaluation, in addition to the design and development of web-based Android applications for deploying AI models.

**Teaching Assistant** Sept 2018 – July 2021
Shahid Beheshti University, Tehran, Iran

- **Courses:** Fundamentals of Computer Vision, Fundamentals of Cryptography, Technical Language (English for Computer Engineering), Advanced Computer Programming, and Fundamentals of Computer and Programming
- Guided classes of 30+ students and assisted in conducting workshops and extra classes, preparing and grading assignments, course projects, and exams, developing test cases for automatic grading, and providing feedback.

**Software Engineering Assistant** Aug 2018 – July 2021
Faraz Pardaz Tehran, Tehran, Iran

- Engaged in financial and administrative system design, development, analysis, and support procedures while practicing communication, teamwork, and problem-solving to tackle the intrinsic challenges of small-scale tech businesses.

**Programmer (Java/XML) and Mentor** Aug 2020 - May 2021

Data Science Laboratory of Shahid Beheshti University, Tehran, Iran

- Contributed to a startup project as a programmer, responsible for developing more than five mini-applications, conducting peer-testing, documenting processes in various forms such as a wiki, and updating codes following system updates.
- Guided a class of 50+ students in designing, implementing, and presenting multiple industry-level projects on behalf of the Data Science Laboratory while providing documentation, facilitation, and supplementary instructions.

## Research Interest

Computer vision, Natural language processing, Multimodal systems, Large language models, Affective computing, Zero/Few-shot learning, Anomaly detection

## Research Output

★ **[A paper on zero/few-shot anomaly detection]** 2025

- **Bahar Amirian Varnousefaderani**, Rakhmonov Akhrorjon, Jae-Soo Kim, Jeonghong Kim
- *Under review*

**[A paper on unsupervised-weakly supervised video anomaly detection]** 2025

- Rakhmonov Akhrorjon, **Bahar Amirian Varnousefaderani**, Jeonghong Kim
- *Under review*

**AONet: Attention network with optional activation for unsupervised video anomaly detection** Oct 2024

- Rakhmonov Akhrorjon, Barathi Subramanian, **Bahar Amirian Varnousefaderani**, Jeonghong Kim
- *ETRI Journal*

★ **Conditioned-Guided Denoising Diffusion Model for Texture Anomaly Detection** Oct 2024

- **Bahar Amirian Varnousefaderani**, Rakhmonov Akhrorjon, Taehun Kim, Jeonghong Kim
- *Presented at the Fall Conference of the Korean Society for Internet Information*

**AED-Net: Attention-Based Detection Model for Disabled Signage Detection** July 2024

- Rakhmonov Akhrorjon, Barathi Subramanian, **Bahar Amirian Varnousefaderani**, Jeonghong Kim
- *The Journal of Korean Institute of Communications and Information Sciences*

★ **Anomaly Detection and Localization with Synthesized Anomaly Features and Assisted MLP** Jan 2024

- **Bahar Amirian Varnousefaderani**, Barathi Subramanian, Rakhmonov Akhrorjon, Jeonghong Kim
- *Presented at the 2024 Winter Conference of Society for Computational Design and Engineering*
- *Awarded as one of the Best Student Papers*

## Recent Projects

- **Road Segmentation without Lane Markings Using Enhanced YOLOP and Image Processing Solutions**
- **Fine-Tuning a Small Language Model with PEFT on a GPT-Synthesized Dataset for Tone Adaptation**

## Additional Education

- **Neural Networks and Deep Learning Course:** Authorized by DeepLearning.AI and offered through Coursera
- **IBM Data Science Professional Certificate:** 8 Courses authorized by IBM and offered through Coursera
- **Google UX Design Professional Certificate:** 6 Courses authorized by Google and offered through Coursera
- **Android Development Course:** Authorized by Tehran University
- **ReactJS:** Authorized by Sharif University of Technology
- **Front-End Web Development and Design:** Authorized and offered by Maktabkhooneh

## Skills

- **Programming:** Python (and its libraries for machine learning, deep learning, and data science), Web development (using HTML, CSS, JavaScript and ReactJS, Python and Flask), Java (Java SE and android development), C/C++, SQL
- **Tools:** Jupyter Notebook, Visual Studio Code, JetBrains toolbox, Google Workspace, Microsoft Office, Git
- **Languages:** English (IELTS overall score 8: L8.5 R9 W7 S8), Korean (TOPIK level 6 + completed KIIP + passed KIPRAT and KINAT), Persian (Native)