MOSTAFA NASERI

Machine Learning | Computer Vision | Wireless Communication

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https://m0574f4.github.io/ Ghent, Belgium https://github.com/M0574F4

INDUSTRY EXPERIENCE

Network Planning and Optimization Engineer

Nokia 11/2016 - 03/2017 Tehran, Iran

- Oversaw 3G and LTE cellular sites in the country's second-largest city (2.2M population)
- Taking initiative to meet tight performance targets
- Built trust through regular in-person meetings with the operator (MTN Irancell)

Quality Assurance (QA) Engineer

NAK Telecom Managed Services

05/2016 - 11/2016 Tehran, Iran

- Served as liaison with the largest mobile operator in the country
- Presenting findings and improvement plans in weekly customer-focused meetings.
- Expanded my expertise by completing comprehensive internal trainings on 2G, 3G, and LTE technologies, which enhanced both my technical depth and ability to mentor junior team members
- Adopted a solutions-oriented mindset, consistently identifying root causes behind integration issues and collaborating with cross-functional teams to resolve them.

PROJECTS

SmartWaterWay

https://www.imec-int.com/en/research-portfolio/smartwaterway

Enabling autonomous barges in urban waterways through low-cost sensors

- *Collaborators*: Pozyx, etc.
- *Focus*: **UWB AoA Estimation** for industrial RTLS solution
- *Techniques*: Transfer Learning, CNN-based regression, data augmentation
- *Achievement*: up to 96% error reduction for only 10% more computation cost
- *Outcome*: Published article on environment-adaptive AoA estimation

EVOLVE

https://evolve-msca.eu/

Electric Vehicles Point Location Optimisation via Vehicular Communications

- *Focus*: **Electric Vehicle Point Location Optimization** leveraging image compression and edge-based inference
- *Collaborators*: Universidad de Málaga, Princeton University
- *Outcome*: Novel **Compressed image transmission** algorithm.
- *Achievement*: improving latency by 38% compared to benchmarks.

5GECO (imec.icon-project)

https://www.imec-int.com/en/research-portfolio/5geco

5G intelligent radio and transport Edge network Cross-Optimization

- *Collaborators*: Nokia Bell Labs, Citymesh, Accelleran, UAntwerp
- *Focus*: **5G radio resource management** in multi-operator environments
- *Role*: Development of frameworks for dynamic spectrum allocation using reinforcement learning models

ACADEMIC EXPERIENCE

Princeton University

Visiting Researcher at Prof. H. Vincent Poor's Lab

Princeton, USA

- Project: Learning-Based Compressed Image Transmission

SUMMARY

Electrical Engineer specializing in **deep learning for machine vision, wireless communications**, and **signal processing**. Passionate about developing solutions that address real-world challenges, from designing fast and efficient machine learning models to creating models capable of adapting to unseen and challenging environments. Skilled at bridging the gap between research and industry through effective collaboration. Experience in EU and national government-funded research and development projects in collaboration with **Nokia Bell Labs, Pozyx, Citymesh, Accelleran, the University of Málaga**, and **Princeton University**.

TECHNICAL SKILLS

Programming

Python, MATLAB, C/C++, Verilog

Tools & Frameworks

PyTorch, TensorFlow, Keras, Git, Kubernetes, Weights & Biases, Scikit-learn

Machine Learning

CNNs, Transformers, Model Compression, Transfer Learning, Quantization, Reinforcement Learning, Anomaly Detection, Time-series Prediction

Machine Vision

Image Compression, Image Generation, Multimodal Models

Wireless Communications

UWB, AoA Estimation, Beamforming, NOMA, Signal of Opportunity for Localization, 5G Network Resource Management

SOFT SKILLS

Effective Communication

Team Collaboration | Project Leadership

Problem Solving | Critical Thinking

Grant Writing & Research

Scientific Publication | Customer Service

Communication in a multinational environment

Adaptability

Proof-of-Concept Development

ACADEMIC EXPERIENCE

University of Malaga
Visiting Researcher at Prof. Cristian Martín Fernández's ERTIS Lab.

Malaga, Spain

- Project: Early Exit Models for Interference Cancellation

Ghent University
Doctoral Student in Computer Science, IDLab-imec

Ghent, Belgium

- Learning-Based Image Compression
- Model Compression for Edge devices and Generalization
- Blind Source Separation

BUPT
Research Assistant at N. C. Beaulieu group Beijing, China

- Statistical Analysis, Wireless channel modeling

Research Assistant
University of Tehran Tehran, Iran

- Resource allocation for Non-Orthogonal Multiple Access (NOMA)

MIT RF Challenge
ICASSP 2024 Seoul, South Korea

- Organized and led a cross-functional team at IDLab to compete in the high-profile MIT RF Challenge, juggling this initiative concurrently with my PhD commitments
- Cultivated a supportive atmosphere by recognizing individual strengths, delegating tasks effectively, and motivating members

EDUCATION

Ph.D. in Computer Science
Ghent University 04/2021 - Present Ghent, Belgium

- Dissertation Focus: **Interference cancellation using CNNs**, **fast inference via model compression & early exits for edge devices**, **angle-of-arrival (AoA) estimation with transfer learning**
- Collaborators: Imec, Pozyx, Princeton University, University of Malaga
- Advisors: Prof. Eli de Poorter, Prof. Adnan Shahid

Master of Science in Electronics and Communication Engineering
Beijing University of Posts and Telecommunications GPA **90** / 100

Beijing, China

- Focus: **Wireless communication channel modeling** and **receiver design & evaluation**
- Received **BGS Scholarship** for Outstanding Academic Performance
- Collaborated with researchers from multiple countries during my master's program and successful publication of joint research findings.

Bachelor of Science in Electrical Engineering
Shiraz University of Technology Shiraz, Iran GPA **17.2** / 20

- Ranked top 10% of the class
- Teaching Assistant for courses in **Filter & Circuit Synthesis** and **Digital Design**

KEY ACHIEVEMENTS

Top 0.3% Electrical Engineer in the country (2014)
Ranked 119 among 40,000 participants in the Iran's national university entrance exam for master degree in electrical engineering

FI DGR Grant for Predoctoral Research Staff Recruitment (2021)
Won €23,774.97, Government of Catalonia

Graduate/Research Assistantship & Tuition (2021)
$48,743, University of Illinois at Chicago

MIT RF Challenge – ICASSP 2024
Recognition for data-driven signal separation in radio spectrum top 5 teams world-wide

PUBLICATIONS (SELECTED)

High-Throughput Blind Co-Channel Interference Cancellation for Edge Devices Using Depthwise Separable Convolutions, Quantization, and Pruning
https://ieeexplore.ieee.org/abstract/document/10817537

Deep Learning-Based Image Compression for Wireless Communications: Impacts on Reliability, Throughput, and Latency
https://arxiv.org/pdf/2411.10650

Blind Co-Channel Interference Cancellation Using Fast Fourier Convolutions
https://ieeevtc.org/vtc2024spring/DATA/PID2024002600.pdf

Adapting UWB AoA estimation towards unseen environments using transfer learning and data augmentation
https://sciencedirect.com/science/article/abs/pii/S2542660524002397

Machine learning-based angle of arrival estimation for ultra-wide band radios
https://backoffice.biblio.ugent.be/download/8757709/8757712

REFERENCES

References available upon request