Dr. Roshanak Zakizadeh

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PROFESSIONAL SUMMARY

AI and Computer Vision Specialist with 8+ years of experience in deep learning, computer vision, and computational imaging solutions. Strong background in developing and deploying image processing algorithms, with expertise in machine learning frameworks and large language models. Proven track record in research and industry projects for retail, security, and video technology sectors.

TECHNICAL SKILLS

Programming Languages: Python, C/C++, MATLAB
AI & Machine Learning: TensorFlow, Keras, PyTorch, Scikit-learn, Neural Networks, Computer Vision
LLM & NLP: Transformers, Weaviate, CLIP, Vision-Language Models
Cloud & DevOps: AWS, Docker, Kubernetes, Git, VS Code, Poetry, UV, W&B
Data Analysis: Pandas, NumPy, Matplotlib, Looker, Dask
Specialized Technologies: OpenCV, HEVC, AVC, Image Fusion, HDR Processing
Project Management: Jira, Confluence, Asana

PROFESSIONAL EXPERIENCE

Freelance AI & Computer Vision Consultant Feb 2024 – Present
Remote

- Implementing Transformer-based architectures for image and text processing applications
- Developing solutions using Vision-Language models (CLIP) for feature extraction and retrieval
- Creating cross-modal search systems for image-text matching using representation learning

Senior Research Scientist March 2020 – Feb 2024
Onfido *London, UK*

- Implemented document detection and registration algorithms for image analysis
- Developed fraud anomaly detection solutions using deep learning, improving security compliance by *35%*
- Improved document image caption using multi-fusion techniques, reducing false rejection rate by 10%
- Conducted extensive error analysis of biometric product, cutting down 30% of false rejection cases.
- Collaborated with cross-functional teams to deploy production-ready AI systems at scale

Research Scientist Dec 2017 – March 2020
Cortexica *London, UK*

- Led development of visual search systems for major retailers (John Lewis, Nike), improving initial product performance by 60%
- Designed and implemented data cleaning pipelines and structured product annotations
- Optimized CNN-based product recognition models using TensorFlow/Keras
- Published research on fine-grained instance retrieval and visual search technologies

Research Engineer Nov 2016 – Dec 2017
V-NOVA *London, UK*

- Developed advanced video compression solutions supporting HDR & WCG content
- Built cross-platform tools in Python and C++ to optimize video coding standards
- Enhanced video processing algorithms for compression efficiency

Part-time Research Engineer Apr 2016 – Nov 2016
Spectral Edge *Cambridge, UK*

- Researched and developed computational photography solutions
- Implemented image fusion algorithms combining RGB and NIR images
- Created High Dynamic Range imaging solutions

Research Assistant Sept 2013 – Nov 2016
University of East Anglia *Norwich, UK*

- Developed image evaluation methodologies and metrics (cited over 100 times), conducted statistical analysis for both RGB and hyperspectral images
- Performed psycho-physical studies of white balance algorithms

Education

PhD in Computer Science — University of East Anglia, Norwich, UK | 2016

- Thesis: "Re-evaluation of Illuminant Estimation Algorithms in Terms of Reproduction Results and Failure Cases"
- Focus areas: Computer Vision, Machine Learning, Image Processing
- Full scholarship recipient

Master of Color in Informatics and Media Technology — Université Jean Monnet, France | 2013

- Thesis: "Color Gamut Scalable Video Coding for SHVC"
- Full scholarship recipient

Master of Technology in Computer Science — University of Hyderabad, India | 2011

B.Sc. in Computer Science — Shahid Bahonar University of Kerman, Iran | 2007

NOTABLE PUBLICATIONS & PATENTS

- "Generalized anomaly detection." U.S. Patent Application No. 17/830,208
- "Improving the Annotation of DeepFashion Images for Fine-grained Attribute Recognition," arXiv preprint, 2018
- "The Reproduction Angular Error for Evaluating the Performance of Illuminant Estimation Algorithms", IEEE Trans. on Pattern Analysis and Machine Intelligence, 2017
- "A Hybrid Strategy For Illuminant Estimation Targeting Hard Images," IEEE International Conference on Computer Vision (ICCV) Workshop, 2015

ADDITIONAL EXPERIENCE

- **Consultancy**: Arian Milan Co., Kerman, Iran (remote) | 2016
- **Honorary Fellow**: University of East Anglia, Norwich, UK | 2018-2020
- **Visiting Researcher**: National University of Singapore, Singapore | Feb-Apr 2015
- **Research Intern**: Technicolor R&D France Snc, Rennes, France | Jan - July 2013

PROFESSIONAL SERVICES

- **Reviewer**: IEEE Transactions on Image Processing (TIP), since 2018
- **Reviewer**: Optical Society of America, since 2018
- **Reviewer**: Society for Imaging Science & Technology, since 2017