

SALMAN KHAN

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OBJECTIVE

Enthusiastic researcher with a strong development background in various domains ranging from statistical learning to advanced deep learning techniques for big multimedia data analysis, action/activity recognition, complex scene analysis, and healthcare. Interested in deployable research projects with a supportive grip over Python, MATLAB, and deep learning frameworks (PyTorch, TensorFlow, and Keras).

EXPERIENCE - ACADEMIA

Research Fellow Feb 2023 - *present*
[Visual Artificial Intelligence Laboratory, Oxford Brookes University, Oxford, United Kingdom](#) *Oxford, UK*

- Part of the [Epistemic AI](#) project funded by the European Union's Horizon 2020.
- Leading the [ROAD++](#) project on Event Detection for Situation Awareness in Autonomous Driving.

Research Assistant Feb 2020 - Jan 2023
[Visual Artificial Intelligence Laboratory, Oxford Brookes University, Oxford, United Kingdom](#) *Oxford, UK*

- Led the project on *Deep learning for modelling complex video activities using graph neural networks*.
- Contributed to several lab projects including *neurosymbolic reasoning, continual learning, and surgical robotics*.

Visiting Lecture and Tutor July 2023 - Aug 2023
[Lady Margaret Hall, University of Oxford](#) *Oxford, UK*

- Lecturer & tutor for the LMH summer program - *AI and Machine Learning: Theory and Practice*.
- Tutor for the LMH summer program - *AI and Machine Learning: Advanced Applications of Neural Networks and Deep Learning*

Visiting Researcher Sept. 2022 - Jan 2023
[King Abdullah University of Science and Technology](#) *Thuwal, Saudi Arabia*

- Worked on *spatiotemporal sentence grounding*.
- Worked on extending the complex activity models to language-assisted spatiotemporal video grounding.

Research Assistant Mar 2018 - Jan 2020
[Sejong University, South Korea](#) *Seoul, South Korea*

- Research studies related to disaster management (fire and smoke detection and segmentation), implemented in Python with different deep learning tools and published in reputed journals.
- Implemented a fully functional real-time baby monitoring system, deployed in a nursery.

EXPERIENCE - INDUSTRY

Computer Vision Engineer Sept. 2017 - Jan 2022
[Brarista, London, United Kingdom](#) *London, UK*

- Proposed and implemented different computer vision modules for measuring the bra size from images.
- Registered a patent on methods and techniques for vision-based bra fitting.

Freelancer Sept. 2020 - Jan 2022
Engaged in over 20 diverse freelancing projects, including: *Online*

- Road cracks segmentation and Traffic sign detection for [Blue Dome Technologies, USA](#).
- Fire/smoke detection and segmentation for [Niocraft BV Netherlands](#)
- Face recognition and identity authentication for [ORIO, USA](#)

EDUCATION

- PhD Computer Vision**, Oxford Brookes University, United Kingdom 2020 - 2023
- Thesis: Spatiotemporal Event Graphs for Dynamic Scene Understanding.
 - Supervised by: [Prof. Fabio Cuzzolin](#)
- MS Computer Vision**, Sejong University, Seoul, South Korea 2018 - 2020
- CGPA: 4.42/4.5 , Percentage: 98.4%.
 - Thesis: Deep learning-based smoke detection and segmentation in surveillance videos.
 - Supervised by: [Prof. Sung Wook Baik](#) and [Dr. Khan Muhammad](#).
- BS Computer Science**, Islamia College Peshawar, Pakistan 2013 - 2017
- CGPA: 3.92/4.0, Percentage: 98%.
 - Thesis: Multi-Grade Brain tumor Classification using Deep Convolution Neural Network.
 - Supervised by: [Prof. Muhammad Sajjad](#).

SELECTED PUBLICATIONS

1. **Khan, S.**, Teeti, I., Bradley, A., Elhoseiny, M., Cuzzolin, F. A Hybrid Graph Network for Complex Activity Detection in Video. In 2024 IEEE winter conference on applications of computer vision (WACV).
2. Singh, G., Akrigg, S., Di Maio, M., Fontana, V., Alitappeh, R. J., **Khan, S.**, ... Cuzzolin, F. “Road: The road event awareness dataset for autonomous driving” IEEE Transactions on Pattern Analysis and Machine Intelligence (2022).
3. E Giunchiglia, MC Stoian, **S Khan**, F Cuzzolin, T Lukasiewicz “ROAD-R: The Autonomous Driving Dataset with Logical Requirements” IJCAI 2022 – Workshop, IJCLR 2022.
4. I Teeti, **S Khan**, A Shahbaz, F Cuzzolin “ Vision-based Intention and Trajectory Prediction in Autonomous Vehicles: A Survey” IJCAI 2022.
5. **S. Khan** and F. Cuzzolin “Spatiotemporal Deformable Scene Graphs for Complex Activity Detection” Proceedings of the British Machine Vision Conference (BMVC 2021).
6. **S. Khan**, et al. ”DeepsMOKE: Deep learning model for smoke detection and segmentation in outdoor environments.” Expert Systems with Applications 182 (2021): 115125.
7. **S. Khan**, K. Muhammad, S. Mumtaz, S. W. Baik and V. H. C. de Albuquerque, ”Energy-Efficient Deep CNN for Smoke Detection in Foggy IoT Environment,” in IEEE Internet of Things Journal (2019).
8. M. Sajjad*, **S. Khan***, K. Muhammad, W. Wu, A. Ullah, S. W. Baik. Multi-grade brain tumor classification using deep CNN with extensive data augmentation. Journal of computational science, 30, 174-182 (2019).

For complete list of publications, please visit my profiles: [Google Scholar](#), [ResearchGate](#)

AWARDS & SCHOLARSHIPS

- Our paper “ROAD-R: the Autonomous Driving Dataset for Learning with Requirements” has won two awards: **Best student paper award** at [IJCLR 2022](#) and **Best Paper Award** at the [IJCAI \(AI4AD\) 2022](#).
- **Fully-funded PhD studentship by Huawei Technologies** in Oxford Brookes University, UK (2020).
- **Fully-funded MS Scholarship** in Software Convergence, Sejong University, South Korea (2018).
- Paper on my BS thesis “Multi-grade brain tumor classification using deep CNN with extensive data augmentation” is **the most cited paper** in Elsevier Journal of Computational Science.
- **Winner of Speed Programming Competition** at Islamia College University (ICUETC-15) (2015).

CONFERENCES

- Lead organizer of [the ROAD++ challenge & workshop at ICCV 2023](#) held in October 2023.
- Co-organizer of [the ROAD-R challenge at NeurIPS 2023](#) held in December 2023.
- Selected for International Computer Vision Summer School (ICVSS), Sicily, Italy, 2022 (130 selected out of 631).

- Co-organizer of the [Continual Semi-Supervised Learning \(CSSL\) workshop/challenge at IJCAI 2021](#).
- Co-organizer of the ROAD challenge/workshop at ICCV 2021 held in October 2021.
- Presented research paper at [ICNGC conference 2019](#) Chiang Mai, Thailand.
- Presented research paper at [ICNGC KingPC conference 2018](#) Jeju-do, South Korea.

SKILLS

Programming Languages	Python, MATLAB, C#, C++, JAVA
Python libraries	OpenCV, Scikit-learn, Scikit-image, Numpy, Matplotlib etc.
Deep Learning Frameworks	PyTorch, TensorFlow, Keras

SERVICES

Memberships	Student Member IEEE (S'19)
Reviewer at Conferences	CVPR'24, CVPR'23, NeurIPS'23, ICCV'23, BMVC'21, ICCV'21.
Reviewer at Journals	IEEE TITS, IEEE TII, IET Image Processing, IEEE Access, Artificial Intelligence Review, IEEE IoTJ, Big Data

REFERENCES

[Prof. Fabio Cuzzolin](#)

(PhD advisor)
Professor of Artificial Intelligence
Director of the VAIL Laboratory
Oxford Brookes University, UK
fabio.cuzzolin@brookes.ac.uk

[Dr. Khan Muhammad](#)

(MS co-supervisor)
Assistant Professor
Director of VIS2KNOW Lab
SKKU, Seoul, South Korea
khan.muhammad@ieee.org

[Dr. Naeemullah Khan](#)

(Lab member at VAIL)
Instructional Assistant Professor
CEMSE Division
KAUST, Saudi Arabia
naeemullah.khan@kaust.edu.sa