




# SYED TALAL WASIM

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## EDUCATION

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### Universidad Autónoma de Madrid

Sep 2019 – Jun 2021

*MS Image Processing and Computer Vision - CGPA - 8.78/10*

*Madrid, Spain*

- Funded by the Erasmus Mundus Joing Masters Degree (EMJMD) Scholarship Program
- MS Thesis: Automatic Typography Analysis on Figurative Content
- Supervised by Dr. Mathieu Salzmann (CVLAB) at EPFL

### ETH Zurich

Jul 2021

*Robotics Summer School and Symposium*

*Zurich, Switzerland*

- Highly selective program that admits 40 participants (M.S. or Ph.D. students)
- Attended a week-long intensive theoretical and practical education classes in autonomous robotics

### Habib University

Sep 2015 – Jun 2019

*BS Electrical Engineering - Minor in Computer Science - CGPA - 3.86/4.00*

*Karachi, Pakistan*

- BS Thesis: SquadBot: A Multi-Agent Robotics Teaching and Research Platform
- Graduated with 1<sup>st</sup> position in program

### Stanford University

Jun 2017 – Aug 2017

*Summer International Honors Program - CGPA - 3.87/4.00*

*Stanford, USA*

- Coursework: Technology Entrepreneurship, Leading Trends in IT, Smart Cities & Communities

## WORK EXPERIENCE

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### Computer Vision Lab, Mohamed Bin Zayed University of AI

Apr 2022 – Present

*Research Assistant*

*Abu Dhabi, UAE*

- Supervisor: Dr. Salman Khan
- Focused on multimodal supervised and self-supervised video representation learning, and out-of-distribution generalization

### Computer Vision Lab, École Polytechnique Fédérale de Lausanne

Feb 2021 – Jul 2021

*Master thesis*

*Lausanne, Switzerland*

- Supervisor: Dr. Mathieu Salzmann
- Focused on Automated Typography Analysis on Figurative Content
- Designed a Transformer based Hierarchical AutoEncoder for Typography Representation Learning
- Used Transformer based Fine-Grained Recognition to separate fine features like Serifs
- Derived a Parameterized Polynomial based mathematical model to represent SVG font characters

### Empathic Computing Laboratory, University of Auckland

Jul 2020 – Mar 2021

*Research Intern*

*Remote*

- Supervisor: Dr. Mark Billinghurst
- Focused on Multimodal Emotion Recognition using Facial Micro-Expressions
- In addition to Facial Micro-Expressions, the impact of other modalities like EEG and GSR was also investigated

### Habib University

Jan 2018 – Jun 2018

*Undergraduate Research Assistant*

*Karachi, Pakistan*

- Supervisor: Dr. Muhammad Farhan
- Detection of Mitosis in Breast Cancer Histopathology Images with Deep Learning

## PUBLICATIONS

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1. **S. T. Wasim**, M. Naseer, S. Khan, F. Khan, and M. Shah, “Vita-clip: Video and text adaptive clip via multimodal prompting,” in *Under Review*, 2022
2. **S. T. Wasim**, R. Collaud, L. Défayes, N. Henchoz, M. Salzmann, and D. Ribes, “Analyzing poster collections using automatic serif classification and font similarities,” in *Under Review*, 2022
3. N. Saffaryazdi, **S. T. Wasim**, K. Dileep, A. F. Nia, S. Nanayakkara, E. Broadbent, and M. Billinghamurst, “Using facial micro-expressions in combination with eeg and physiological signals for emotion recognition,” *Frontiers in Psychology*, 2022
4. **S. T. Wasim**, S. N. Hasany, K. Abbasi, H. Feroz, A. A. Ahmed, M. H. Shaikh, and M. Farhan, “Sim-to-real transfer for object detection and localization on animals,” in *CV4Animals CVPR Workshop*, 2021

## RESEARCH PROJECTS

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### Improving Out Of Distribution Generalization of Vision-Language Models      Dec 2022 - Ongoing

- Aiming to solve the over fitting problem in vision-language prompt learning
- Novel loss formulation to encourage more generalized representation learning while fine-tuning to downstream task

### Textual Context Improves Hardware Resilience in Closed-Set Classifiers      Nov 2022 - Ongoing

- Studying how using a rich textual context can improve resilience to bit errors
- In collaboration with Harvard University

### Efficient CNN Models for Computer Vision on FPGAs      Jan 2020 – Dec 2020

- Year-long Tutored Research Project during the MS program
- Deployment of common image classification models like ResNet50 and VGG19 in low-bit to binary quantized format on FPGA
- Comprehensive work on implementing Skip-Connections in both Streaming Architectures and Matrix/Vector Processors

## SKILLS

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**Languages:** Python (Advanced), C/C++ (Intermediate), C# (Intermediate), Java (Basic)

**Common ML Tools:** Pandas, Numpy, Scikit-Learn, Tensorflow/Keras, OpenCV, Pytorch

**AR/VR and Game Engines:** Unity 3D, HoloLens 1

**Languages:** English: C2 (Expert), Spanish: A1.1 (Elementary), Urdu: Native

## HONORS AND AWARDS

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### Graduate

- **Erasmus Mundus Scholarship:** Two year fully funded scholarship for MS studies

### Undergraduate

- **Dean’s Medal:** For graduating with the highest CGPA in Electrical Engineering program
- **Best Capstone Award:** Awarded the best capstone project award in the Electrical Engineering program
- **Summer Program Scholarship:** Among 8 students selected for funded International Honors Program at Stanford University
- **President’s Honor List:** For maintaining position on Dean’s Honor List in consecutive semesters
- **Dean’s Honor List:** The top 10% students in the program each semester
- **High Academic Achievement Scholarship:** Additional 10% Scholarship for the Top 3 students in the school each semester
- **Merit Scholarship:** Awarded 65% scholarship for 4 years

### High School

- **Intel ISEF:** Fully funded opportunity to represent Pakistan at the Intel International Science and Engineering Fair (ISEF), 2014 in LA, California