PERSONAL INFORMATION

Hassan Ahmed Sial, Ph.D.

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Experienced Researcher in image processing, computer vision, machine learning, and deep learning.

WORK EXPERIENCE

01/10/2021–Present

Postdoctoral Researcher

Computer Vision and Robotics (VICOROB) Lab, Universidad de Girona (Spain)

EU H2020 project iToBoS ("Intelligent Total Body Scanner for Early Detection of Melanoma") for early detection of skin cancer using advanced deep learning methods. IToBoS project involves 19 partners from 13 countries (https://itobos.eu/). The planned objectives are:

- Development of novel ideas for image classification and interpretation.
- Co-supervision of one or more Ph.D. students
- Participation in experiments for the integration of software for skin cancer detection
- Participation in project activities such as meetings and demonstrations

02/03/2016–30/09/2021

Ph.D. Researcher

Computer Vision Center, Universitat Autònoma de Barcelona (Spain)

Intrinsic image decomposition using deep learning methods.

- Building a realistic and large dataset for intrinsic image decomposition and applying state-of-the-art deep learning methods to get intrinsic modalities from a single image.
- Creating a family of synthetic datasets for intrinsic image decomposition.
- Building a dataset and applying CNN to remove lighting effects from document images to improve OCR performance.
- Introducing a pipeline to create datasets along with deep networks for similar tasks such as shadow removal, illumination detection, and single image relighting.

We have used tools such as MATLAB, Python, Keras, and PyTorch

01/04/2019–04/06/2019

Visiting Scholar

Computer Vision Lab, Stony Brook University, New York (United States)

- Researchers collaboration to remove lighting effects from document images.

01/10/2014–01/03/2016

Computer Science Lecturer

University of Engineering and Technology, Lahore (Pakistan)

- Taught calculus and programming languages courses
- Conducted lab experiments

01/08/2012–01/08/2014

Lab Engineer / TA

UET, Taxila (Pakistan)

- Conducted/monitored lab experiments for different computer engineering courses
- Mentored students on how to efficiently learn to program.

01/05/2012–30/07/2012

Trainee Engineer

LCC, Islamabad (Pakistan)

- Supervised installation of a new telecom site.

EDUCATION AND TRAINING

02/03/2016–27/09/2021

Doctor of Philosophy (Ph.D.) in Computer Vision

Universitat Autònoma de Barcelona, Barcelona (Spain)

Thesis: Estimating Light Effects from a Single Image: Deep Architectures and Ground-Truth Generation.

01/08/2012–01/08/2014

Master of Science (MS) in Computer Engineering (Signal and Image Processing)

UET, Taxila (Pakistan)

Thesis: Spatio -Temporal RGBD Cuboids Feature for Human Activity Recognition

01/02/2008–29/02/2012

Bachelor of Science (BS) in Computer Engineering

COMSATS, Islamabad (Pakistan)

Thesis: Library automation system using OCR and Biometrics

SKILLS

Technical Expertise

Computer Vision, Image Processing, Deep Learning, and Machine Learning

Languages: MATLAB, Python

Libraries: Keras, OpenCV, PyTorch, Tensorflow, Scikit-learn, Numpy, Scipy, Matplotlib

ICT Tools

Microsoft: (word, PowerPoint, Excel, Office 365) Google (Docs, Slides), Latex

ADDITIONAL INFORMATION

Publications

- Hassan A. Sial “Estimating Light Effects from a Single Image: Deep Architectures and Ground-Truth Generation” Ph.D. Thesis Universitat Autònoma de Barcelona (2021)
- Sagnik Das, Hassan A. Sial, Ke Ma, Ramon Baldrich, Maria Vanrell and "Dimitris Samaras “Intrinsic Decomposition of DocumentImages In-the-Wild" BMVC (2020)
- Hassan A. Sial, Ramon Baldrich, Maria Vanrell and Dimitris Samaras "Light Direction and Color Estimation from Single Image with Deep Regression" London Imaging Meeting (2020)
- Hassan A. Sial, Ramon Baldrich, and Maria Vanrell "Deep intrinsic decomposition trained on surreal scenes yet with realistic light effects," Journal of the Optical Society of America A (2020)
- Hassan A. Sial, Sancho-Asensio, Ramon Baldrich, Robert Benavente and Maria Vanrell “Color-based Data Augmentation for Reflectance Estimation.” Color and Imaging Conference (2018)
- Hassan A. Sial, Muhammad Haroon Yousaf and Fawad Hussain. “Spatio -Temporal RGBD Cuboids Feature for Human Activity Recognition” The Nucleus Journal (2018)
- Asim Raza, Muhammad Haroon Yousaf, Hassan A. Sial and Gulistan Raja “HMM-based scheme for smart instructor activity recognition in a lecture room environment” *The Smart Computing Review* (2015)
- Muhammad Haroon Yousaf, K. Azhar, Hassan A. Sial “A novel vision based Approach for instructor's performance and behavior analysis” In *International Conference on Communications, Signal Processing, and their Applications (ICCSPA)* (2015)
- Abdul B., Uzair A., Hassan A. Sial., and Ajreen Qammar “Library Automation System Using OCR and Biometrics” in *International Journal of Technology and Research* (2013)

Honors and awards

- Awarded Ph.D. with “Excellent Cum Laude”
- FPI Ph.D. research grant by the Spanish Ministry of Economy and Competitiveness
- Research scholarship for Master in Computer Engineering by UET Taxila
- 1st position in MS Computer Engineering, scored A+ in 7 out of 8 courses.
- Institute and Campus Bronze Medal from Comsats Islamabad for getting 3rd position.

Certifications

- Deep Learning Barcelona Symposium 2019
- 2nd international summer school on deep learning 2018, University of Genova and IRDTA - Brussels/London
- AERFAI summer lectures & colloquium On deep learning For computer vision, 2018, Computer Vision Center, Barcelona

Languages

Mother tongue(s): Urdu, Punjabi

Foreign Language(s): Proficient English, Spanish level A1

Memberships

Pakistan Engineering Council 2012-Present