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EDUCATION

2019 – Present	**Ph.D., Computer Science**, National University of Ireland, Galway Advisor: Michael Schukat (NUIG), Rachel McDonnell (TCD), Peter Corcoran (NUIG)
2018-2019	**MSc, Computer Science (Data Analytics)**, National University of Ireland, Galway Advisor: Matthias Nickles (NUIG) Thesis: "Combining External Domain Knowledge with Deep Neural Network in Text Classification"
2007-2011	**BTech, Electronics and Communication Engineering** West Bengal University of Technology, India Advisor: Biswa Nath Chatterji Thesis: "Hand Recognition as a Biometric with Stereo Image Matching"

PUBLICATION

2020	**S. Basak**, H. Javidnia, F Khan, R. McDonnell, M. Schukat. Methodology for Building Synthetic Datasets with Virtual Humans. ISSC 2020
2020	F. Khan, **S. Basak**, H. Javidnia, M. Schukat, P. Corcoran High-Accuracy Facial Depth Models derived from 3D Synthetic Data. ISSC 2020
2021	**S. Basak**, F Khan, R. McDonnell, M. Schukat. Learning Accurate Head Pose for Consumer Technology from 3D Synthetic Data. ICCE 2021
2021	F. Khan, **S. Basak**, P. Corcoran Accurate 2D Facial Depth Models Derived from a 3D Synthetic Dataset. ICCE2021
2021	**S. Basak**, P. Corcoran, F. Khan, R. Mcdonnell,M. Schukat Learning 3D Head Pose From Synthetic Data: A Semi-Supervised Approach. IEEE Access, 2021
2021	F. Khan, S. Hussain, **S. Basak**, J. Lemley, P. Corcoran An efficient encoder-decoder model for portrait depth estimation from single images trained on pixel-accurate synthetic data. Neural Networks, 2021

WORK EXPERIENCE

Academic

10/2019 - 8/2021	**Teaching Assistant, NUIG**

- CT255: Next Generation Technologies II – Cybersecurity & 2D Game Development in Java
- CT861: Computer Architecture and Operating System
- CT3535: Object Oriented Programming with Java
- CT417 Software Engineering III

7/2019 – 9/2019	**Research Assistant, NUIG**

- Building pipeline to generate synthetic 2D data from 3D Virtual Human Models with the help of CGI tools like Blender

Non-Academic

9/2014 – 6/2018	**Software Developer, Cognizant**

- Full Stack Web Application Development, Technology Stack – C#, ASP.Net MVC, Web API, SQL, Angular JS
- Data Warehouse development and maintenance, Technolgy – MS Azure, NETEZZA

7/2011 – 8/2014	**Programmer Analyst, Cognizant**

- Application maintenance and Support through proper Incident and Problem Management procedure (ITIL), Technology Stack – C#, ASP.Net, WCF
- Database Development, maintenance & migration, Technology Stack – MS SQL Server, SSIS, SSRS

RESEARCH PROJECTS

3/2021 – Till date	**Generate Random 3D Human Facial Data using Generative Methods** - Accurate 3D Facial Reconstruction from 2D images. - Using the above method try to integrate with the generative models to gererate random 3D facial mesh with proper textures.
11/2019 – 2/2021	**Accurate Human Facial Depth and 3D Head Pose Estimation from 3D Synthetic Data** - Generating accurate facial depth and head pose data from 3D Models through CGI Tool Blender and estimate the real facial depth and head pose with deep learning model trained on that synthetic data. - Additionally implement Domain Adversarial Learning to learn domain invariant features from synthetic and real images in an unsupervised way.
1/2019 – 8/2019	**Combining External Domain Knowledge with Deep Neural Network in Text Classification** - Enriching the training data with an external knowledge graph database like WordNet, DBPedia for text classification where there is a limited amount of labelled data.
9/2010 – 7/2011	**Hand Recognition as a Biometric with Stereo Images** - Capture stereo images of hands of human subjects and the depth cue calculated from the stereo pair to generate identity information and used as biometric recognition.

VOLUNTEERING EXPERIENCE

11/2018 – 9/2019	**Mathematics & Science Tutor, Youth Work Ireland** - Helped students in Science and Maths with one to one grind
1/2013 – 1/2018	**Science Teacher, Cognizant Outreach** - Taught maths and Computer to regular secondary school students from standard V to X.

AWARDS & SCHOLARSHIPS

2019	Postgraduate Research Scholarship NUIG 2019-20.
2019	Research Scholarship in SFI Center for Research Training in Digitally Enhanced Reality (D-REAL) under Grant No. 18/CRT/6224.

SKILL PROFILE

Languages	Python, R, C# with ASP.Net MVC, Java 8, LATEX
ML Frameworks	PyTorch, TensorFlow, Keras, Apache Spark
Cloud Platform	Azure Cortana Intelligence Suite
Database	Microsoft SQL Server, Oracle 11g, Netezza, Azure SQL Datawarehouse
Dev Tools	PyCharm, Microsoft Visual Studio, Jupyter Notebook, R Studio
Reporting	Power BI, Tableau, Crystal Reports
JS	Java Script, Angular JS

PERSONAL

Languages	Bengali – Native English – Advanced Proficiency Hindi – Elementary Proficiency
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