HASAN IQBAL

MICHIGAN, USA

+1 313 398 1916 ---- hasaniqbal.me ---- hasan.iqbal1292@gmail.com

Skills

- Generative AI , Computer Vision, Virtual Reality (VR), Deep Learning, Backend Dev.
- Languages: Python, C#, C++, Java, JS, SQL, NoSQL, TypeScript
- OpenCV, OpenGL, Unity 3D, Pytorch/TensorFlow, Node.JS, Angular.JS

Experience

Computer Vision Research Intern

2024-08-26 till now

Rocket Homes, Detroit, MI, USA

- Engaging in advanced 3D computer vision research, focusing on Neural Radiance Fields (NeRFs) and 3D Gaussian Splatting (3DGs) to develop innovative solutions for real estate applications.
- Integrating augmented reality (AR) and virtual reality (VR) technologies with NeRFs and 3DGs to enhance user experiences in 3D visualization and interaction.
- Applying generative AI and diffusion models to edit and refine 3D models generated from NeRFs and 3DGs, pushing the boundaries of 3D content creation.
- Acquiring and optimizing camera poses for accurate training of 3D models, ensuring high fidelity in rendering and model generation.
- Working on optimizing pre-existing camera parameters to improve the accuracy and quality of the 3D models produced.

Software Engineer Intern

2024-05-20 to 2024-07-26

Rocket Mortgage (former Quicken Loans), Detroit, MI, USA

- Developed and maintained the Backend for Frontend (BFF) layer, enhanced communication between user interfaces and backend services in a Node.js and TypeScript environment.
- Implemented robust API integrations using Auth0 for secure authentication, ensuring seamless data exchanges across various platforms.
- Contributed to the front-end service delivery, optimizing user interface interactions and performance.
- Gained hands-on experience with a suite of modern DevOps and cloud technologies including AWS EC2, Kubernetes, Terraform, and Rancher, enhancing deployment processes and infrastructure scalability.
- Utilized continuous integration and deployment tools such as CircleCI to streamline development workflows.
- Engaged with cutting-edge technologies like Hal9000 to explore innovative solutions in software development.

Image Algorithm Engineer

2019-03-8 to 2021-06-15

Mengbaby Information Technology (Shanghai) co. ltd.

- Worked on various challenging Computer Vision projects like counterfeit detection, OCR, Object detection etc.
- Worked on OpenCV, Python for image processing.
- Used Siamese triplet loss deep learning model for counterfeit detection.

- Used Tesseract OCR and other OCR papers from CVPR for characters recognition part in the project.
- Worked with Resnet and InceptionNet. Implemented in Tensorflow, Keras and Pytorch.
- Used YoloV3 for object detection.
- Implemented Flask servers for deep learning models on the servers.

Intern 2018-11-01 to 2019-02-09

Hainan PPK Information Technology Ltd, China

- Worked on Image processing, Opencv and Python.
- Worked on Resnet, GoogleNet and did their implementation in Tensorflow, Keras and Pytorch.

Software Developer 2015-07-01 to 2016-06-30

Pacsquare Technologies Ltd., Islamabad, Pakistan

- Worked on Forex related desktop application.
- Application was server/client based on real time data feed of forex quotes. .
- MT4 and DDF feed incorporation in the system.
- Worked on C# for forex application.

Intern 2014-06-16 to 2014-08-11

Techlogix, Islamabad, Pakistan

- Worked on node.js for back-end, C# for application development and java for manipulation of Flexcube.
- Learnt about database implemented in the Flexcube

Education

Wayne State University, Detroit, Michigan, USA

Doctorate of Computer Science ▪ Sep 2021 till now

- CGPA: 3.93 / 4.0 till now
- PhD Computer Science Student at Computer Graphics and Visualization Lab (CGV)
- Currently working in technologies related to Computer Vision, Computer Graphics, Deep Learning, Virtual Reality and 3D/4D generation.
- Doing research on projects which include Generative AI, Diffusion Models, VR/AR, Federated Learning and Neural Radiance fields.
- Awarded Graduate teaching assistantship (GTA) by Department of Computer Science, Wayne State University

Tsinghua University (清华大学), Beijing, China

Masters of Advanced Computing ▪ July 2018

- CGPA: 3.8 / 4.0
- Awarded Chinese scholarship council (CSC) scholarship.
- Research student at Human Computer Interaction Lab, Tsinghua University.
- Worked on Virtual Reality (VR) with HTC Vive using unity 3D (C# scripts) for Computer Graphics and SteamVR (Thesis).

National University of Sciences and Technology (NUST), Islamabad, Pakistan

Bachelors of Software Engineering ▪ June 2015

- CGPA: 3.75 / 4.0

- Selected as Google Student Ambassador, 1st Batch of Pakistan 2013.
- Rector's Gold Medal for best Final Year Project.
- Gold Medal for 'Special Performance'.
- Represented Team Pakistan as Google Student Ambassador in Search Summit with Google 2013 Yogyakarta, Indonesia.

Publications:

1. Yan, Y., Yu, C., Ma, X., Huang, S., Iqbal, H., & Shi, Y. (2018, April). Eyes-Free Target Acquisition in Interaction Space around the Body for Virtual Reality. In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (p. 42). ACM.

2. Iqbal, H., Latif, S., Yan, Y., Yu, C., & Shi, Y. (2021). Reducing Arm Fatigue in Virtual Reality by Introducing 3D-Spatial Offset. *IEEE Access*, 9, 64085-64104.

3. U. Khalid, H. Iqbal, S. Vahidian, J. Hua and C. Chen, "CEFHRI: A Communication Efficient Federated Learning Framework for Recognizing Industrial Human-Robot Interaction," 2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Detroit, MI, USA.

4. Iqbal, H., Khalid, U., Chen, C., Hua, J. (2024). Unsupervised Anomaly Detection in Medical Images Using Masked Diffusion Model. In: Cao, X., Xu, X., Rekik, I., Cui, Z., Ouyang, X. (eds) Machine Learning in Medical Imaging. MLMI 2023.

5. Khalid, U*., Iqbal, H*., Farooq, A., Hua, J., Chen, C. (2024). 3DEgo: 3D Editing on the Go! In: Proceedings of European Conference on Computer Vision (Accepted paper at ECCV '24)(*Equal contribution, co-first-author).

6. Khalid, U., Iqbal, H., Karim, M. N., Hua, J., Chen, C. (2024). LatentEditor: Text Driven Local Editing of 3D Scenes. In: Proceedings of European Conference on Computer Vision (Accepted paper at ECCV '24)(*Equal contribution, co-first-author).

7. Karim, M. N., Iqbal, H., Khalid, U., Chen, C., Hua, J. (2024). Free-Editor: Zero-shot Text-driven 3D Scene Editing. In: Proceedings of European Conference on Computer Vision (Accepted paper at ECCV '24)(*Equal contribution, co-first-author).

Google Scholar ID:
https://scholar.google.com/citations?user=jjVY94MAAAAJ&hl=en&oi=sra

Linkedin ID:

https://www.linkedin.com/in/hasaniqbal1292