Asrar Alruwayqi

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Education

Carnegie Mellon University **Aug 2024**
Master of Science in Computer Vision *Pittsburgh, PA*

Majmaah University **June 2015**
Bachelor of Science in Computer Science *Riyadh, Saudi Arabia*

Relevant Coursework

- Computer vision
- Geometry-based Methods in Vision
- Statistical Techniques in Robotics
- Understanding Generative Computer Vision

Experience

XuLab at Carnegie Mellon University **Nov 2022 – Mar 2023**
Research Assistant *Pittsburgh, PA*

- Assisted in a groundbreaking project on contrastive learning for self-supervised object detection, enhancing computer vision research.
- Engaged in the critical literature review to inform research strategies and align with current scientific trends.
- Assisted in the preparation and submission of research findings for academic publication.
- Upheld a deep commitment to academic excellence and rigor throughout all project stages, from inception to execution.

National Center for Artificial Intelligence **April 2021 - July 2022**
Research Engineer *Riyadh, SA*

- Played a key role in a research-focused environment, constantly seeking innovative solutions and advancing knowledge.
- Contributed to the successful development of a brain tumor radiogenomic classifier using 3D MRI data, aimed at enhancing medical technology.
- Addressed and overcame challenges with noisy annotations in mammogram images, thereby improving the reliability of medical imaging data.

National Information Center **April 2019 - April 2021**
Software Developer *Riyadh, SA*

- Collaborated in the development of innovative software solutions, integrating technology with research.
- Utilized a research-driven approach to enhance face recognition systems at airports, aiming for greater efficiency and accuracy in security.
- Played a key role in the Saudi National IoT platform project, collecting valuable data for academic and technological advancement in IoT.

Saudi Telecommunications Company **June 2016 - April 2019**
Software Developer *Riyadh, SA*

- Engaged in the telecommunications sector, applying a problem-solving mindset to complex technical issues.
- Utilized analytical skills to overcome App Store launch challenges, enhancing code functionality for improved user experiences.
- Contributed to the development of internal iOS applications, focusing on efficient project management and operational excellence.

Projects

dynamic Scene 3D Reconstruction | *PyTorch, 3D Reconstruction, Nerf* **2022/2023**

- Developed an innovative approach for depicting dynamic 3D scenes with a singular feature plane, simplifying complex modeling.
- Crafted this method as an efficient solution for dynamic 3D scene modeling and re-rendering, balancing simplicity and robustness.
- Aimed to significantly cut computational demands while ensuring the maintenance of high-quality reconstructions.

Dense Contrastive Learning for Self-Supervised Object Detection | *Deep learning, unsupervised learning* **2022/2023**

- Created an Android application using Java and Android Studio to calculate tiExecuted rigorous empirical evaluations concerning the integration of dense contrastive learning methodologies within the realm of self-supervised object localization and recognition.

- Leveraged the advanced capabilities of the Detectron2 framework, employing a ResNet-50 architectural foundation as the primary feature extraction mechanism.
- Anticipate that this research endeavor holds the potential to usher in notable advancements and seminal contributions to contemporary computer vision literature and practices.

NeoSOFT2: An Open-Source Stereo Visual Odometry for Road Vehicles | *Stereo camera calibration* **2023**

- Implemented the core SOFT2 algorithm for perceptive odometry in robotics, enhancing accuracy in dynamic 3D scene representation.
- Conducted thorough testing and validation of the algorithm against the KITTI dataset, ensuring alignment with top-tier performance benchmarks.
- Extended the SOFT2 algorithm to include advanced features like multi-hypothesis tracking and online camera calibration, demonstrating versatility in software development.

Technical Skills

Languages: Python, C, HTML/CSS, JavaScript, SQL, Swift
Developer Tools: VS Code, Eclipse, xcode, AWS
Technologies/Frameworks: Linux, GitHub, PyTorch, PyTorch3D, Torchio

AWARDS

3rd winner in computer vision competition **AI Center**
Riyadh, SA *2021*

3rd winner in creative Hackathon track **The Ministry of Interior**
Riyadh, SA *2020*

1st winner in medical Hackathon track **MIT**
USA *2018*