mnadeemdev.github.io

Muhammad Nadeem

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github website

Education

2nd Mar-20
18th Feb-22
Sejong University, Seoul, South Korea
○ M.S in Computer Science and Engineering
○ Thesis: FlameNet: An Efficient Deep Learning Framework for Fire Detection and Classification in Smart City Environment
○ GPA: 4.25/4.5, Presentation Link

1st Feb-14
23rd Apr-18
The Islamia University of Bahawalpur, Bahawalpur, Pakistan
○ B.S. in Computer Science
○ GPA: 3.28/4.0

Selected Publications

Smart Cities
IF 7.0, Q1
Visual Intelligence in Smart Cities: A Lightweight Deep Learning Model for Fire Detection in an IoT Environment
Muhammad Nadeem, Naqqash Dilshad, Norah Saleh Alghamdi, L Minh Dang, Hyoung-Kyu Song, Junyoung Nam, Hyeonjoon Moon
[MDPI, PDF]

Plants
IF 4.5, Q1
VPBR: An Automatic and Low-Cost Vision-Based Biophysical Properties Recognition Pipeline for Pumpkin
L. Minh Dang, Muhammad Nadeem, Tan N. Nguyen, Han Yong Park, O New Lee, Hyoung-Kyu Song, Hyeonjoon Moon
[MDPI, PDF]

ITCCSCC-2023
Machine Learning for Mental Health: A Systematic Study of Seven Approaches for Detecting Mental Disorders
Muhammad Nadeem, Junaid Rashid, Hyeonjoon Moon, Arailym Dosset
[The 38th International Technical Conference on Circuits/Systems, Computers and Communications, PDF]

ICTC-2023
Wheat Diseases Recognition Using Optimal Features Assisted Modified Soft Attention Network
Muhammad Nadeem, Aqib Khan, Ji-Won Kim, L. Minh Dang, Hyeonjoon Moon
[The 15th International Conference on ICT Convergence]

ICNGC-2023
Best Paper Award
Brest Cancer Recognition Through Visual Intelligence Assisted Lightweight Convolution Neural Network
Muhammad Nadeem, Haseeb Khan, Wisal Khan, L. Minh Dang, Nguyen Le Quan, Hyeonjoon Moon
[The 9th International Conference on Next Generation Computing (ICNGC 2023)]

IEEE Access
IF 3.9, Q1
Under Review
LADNet: A Lightweight Attention-Driven Network for Accurate Wheat Diseases Recognition
Muhammad Nadeem, Habib Khan, L. Minh Dang, Muhammad Islam, Hyeonjoon Moon
[IEEE Access]

Research and Work Experience

15th April-2024
Present

Computer Vision Researcher, Spilab, Seoul, South Korea
Tools: YOLOv10, Yolov9, Openvino, tflite, Deep sort

- Foreign object debris detection using drone
- Sea water waste detection using drone
- Person and object tracking
- Speech Emotion Recognition
- Write research papers, and technical reports, and present the work at conferences and meetings.
- Model quantization and lightweight conversion.
- Drone Based Fire and smoke.
- Multilingual AI Chatbot Development.

15th Mar-22
28th Feb-24

Computer Vision Engineer, Sejong University, Seoul, South Korea
Tools: MaskRCNN, Stable Diffusion, Training, Fine-Tuning, Dataset Development, RNNs, GANS, Diffusion Models

- Working on Image Classification, Image Segmentation and Object Detections methods.
- Worked on Data Parallel, Distributed Data-Parallel, and Multi-Node Training.
- Training, fine-tuning CV models, transfer learning, and evaluating their performance.
- Hands-on experience on recent object detection models (YOLO, FasterRCNN, etc.).
- Write research papers, and technical reports, and present the work at conferences and meetings.

1st Jul-2018
30th June-2021

Software Engineer, Systems Junction, Lahore, Pakistan
Tools: Java, Android Studio, Retrofit, Room Persistence Library, Glide/Picasso, Firebase

- Designing, developing, and maintaining Android applications using Java and XML programming languages.
- Writing clean, efficient, and maintainable code that follows best practices and coding standards.
- Troubleshooting and debugging issues, and implementing fixes to ensure smooth functioning.
- Providing technical guidance and mentorship to junior team members, as needed.
- Work on technical documentation, such as architectural diagrams, code, and user manuals.
- Worked on MVC and singleton pattern, real-time push notifications, Firebase, realm
- Optimizing computer vision algorithms for performance and memory usage on mobile devices.
- Maintaining and improving existing CV codebases, including refactoring and bug fixing.
- Developing and maintaining image processing pipelines and data processing workflows.

Honors and Achievements

2023 **Full Tuition Fee Waiver**, School of Computer Engineering, Sejong University
2022 **Full Tuition Fee Waiver**, School of Computer Engineering, Sejong University
2022 **Prof. Stipend**, CVPR Lab, Sejong University
2023 **Conference Travel Grant**, Ministry of Education, South Korea
2014 **Merit Scholarship for Bachelor Degree**, The Islamia University of Bahawalpur, Pakistan

English Proficiency and Relevant Courseworks

IELTS-AC 6.0 Listening 6.0, Speaking 6.0, Writing 6.0, Reading 5.5
A+ Introduction to Deep Learning, Advanced Deep Learning, Advanced AI
A+ Computer Vision Topics
A0 Advanced HCI

Technical Skills

Object Det Yolov10, SSD, YOLO-NAS, YOLOX, Faster R-CNN, DETR, GroundingDINO, YOLOv10
DL techniques Tracking, Optical Flow, Particle Filtering, Pose Estimation

CV Algorithms	Image Classification and Detection, Segmentation, Tracking
Soft. Control	JIRA, Agile, Scrum and GIT or Subversion
Lang	Python, Keras, JAVA, C++, C#
Editor	Visual Studio Code, PyCharm, Jupyter Notebook
OS	WINDOWS 10, Ubuntu 18.04, Ubuntu 20.04
APIs	PyTorch, TensorFlow, Caffe, OpenCV, Flask, Django

References

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Prof. Junaid Rashid
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Research Mentor
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