Kevin Raj

Saarbrücken
Germany 66121
✆ +4915257657530
✉ kevinyitshak@gmail.com
⌨ kevinyitshak.github.io

Education

April'21–
Jan'24
Masters in Visual Computing, *Universität des Saarlandes*, Saarbrücken.
Thesis: Implicit Surface Reconstruction from Noisy Point-clouds using Local Priors.

June'15–
March'19
Bachelor in Electrical & Electronics Engineering, *Manipal Institute of Technology*, Manipal.
Minor specialization: Signals & Systems.

Publications

2025 **Kevin Raj**, Christopher Wewer, Raza Yunus, Eddy Ilg, and Jan Eric Lenssen. "Spurfies: Sparse Surface Reconstruction using Local Geometry Priors", *International Conference on 3D Vision (3DV), Singapore, 2025*. [pdf] [webpage] [code]

2024 Christopher Wewer, **Kevin Raj**, Eddy Ilg, Bernt Schiele and Jan Eric Lenssen. "latentSplat: Autoencoding Variational Gaussians for Fast Generalizable 3D Reconstruction", *European Conference on Computer Vision (ECCV), Milan, 2024*. [pdf] [webpage]

2020 **P. Kevin Raj**, Aniketh Manjunath, J.R.H. Kumar and Chandra S. Seelamantula. "Automatic Classification of Artery-Vein from Single Wavelength Fundus Images", *In Proc. IEEE International Symposium on Biomedical Imaging (ISBI), Iowa, USA, 2020*. [pdf]

2019 **P. Kevin Raj**, J.R.H Kumar, S. Jois, S. Harsha and Chandra S. Seelamantula. "A Structure Tensor based Voronoi Decomposition Technique for Optic Cup Segmentation", *In Proc. IEEE International Conference on Image Processing (ICIP), Taipei, Taiwan, 2019*. [pdf] [Oral]

2019 J.R.H. Kumar, K. Teotia, **P. Kevin Raj**, A. Jasbon, K.V. Rajagopal and Chandra S. Seelamantula. "Automatic Segmentation of Common Carotid Artery in Longitudinal Mode Ultrasound Images Using Active Oblongs", *In Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Brighton, UK, 2019*. [pdf]

Experience

Nov'23-
Present
Research Assistant, D2 Computer Vision and Machine Learning, **MPI Informatik**.
○ Proposed latentsplat: 360° novel view synthesis (NVS) from two views utilizing both regression and generative approaches using 3D latent gaussians as representation.
○ Achieved SOTA results on both interpolation and extrapolation on sparse NVS.
○ Proposed Spurfies: Sparse surface reconstruction using local geometry priors.
○ First method to show sparse view reconstruction on unbounded scenes.
Tool used: Python, PyTorch

Oct'22-
Oct'23
Research Assistant, CVMP Lab, **Saarland University**.
○ Developed a 3D data handling and visualization API for ray-marching and camera poses under the supervision of Dr-Ing. Eddy Ilg.
○ Optimized data acquisition by creating an efficient pipeline for 6D pose estimation from hand-held mobile videos.
○ Contributed to curriculum development by structuring assignments for 3D Computer Vision and 3D Real World Modeling and Inference courses.
Tool used: COLMAP, Trimesh, Python

Oct'22-
March'23
Teaching Assistant, CG Chair, **Saarland University**.
○ Tutor for the Computer Graphics-1 course offered by Dr-Ing. Philipp Slusallek

Aug'19- Feb'21	**Research Assistant**, Spectrum Lab, **Indian Institute of Science**. ○ Developed a pipeline for analyzing Wireless Capsule Endoscopy (WCE) images in collaboration with QpiAI$^{\text{TM}}$ and the Indian Airforce Command Hospital in Bangalore. *Tool used:* Pytorch
Jan'19- June'19	**Research Intern**, Spectrum Lab, **Indian Institute of Science**. ○ Proposed an Artery-Vein classification network using single-wavelength fundus images, utilizing features from low- to high-level extracted from the Identity Mapping network as the foundational architecture. ○ Developed an ImageJ plugin and an Android application based on our 'ICIP 2019' paper. *Tool used:* keras, ImageJ, Java
May'18- July'18	**Summer Research Intern**, Spectrum Lab, **Indian Institute of Science**. ○ Introduced an optic cup segmentation approach using a multi-scale Harris corner technique and iterative Voronoi decomposition, leveraging the structural properties of blood vessels for precise segmentation. ○ Project funded by the Ministry of Human Resource Development (MHRD), India, under the IMPRINT initiative. *Tool used:* MATLAB

Awards

2019	**Travel grant:** Amount of 940$ awarded by IEEE Signal Processing Society to attend ICIP'19

Projects

2022	Ray Tracing Competition. Part of Computer Graphics coursework. [webpage] [code]
2022	**Semi-supervised Image Classification.** Part of Neural Networks Theory and Implementation coursework. [pdf] [code]
2020	**Few-shot Semantic Segmentation of Wireless Capsule Endoscopy Images.** [pdf] [code]

Skills & Certifications

Skills	Python, HTML, LaTeX, PyTorch, Keras, MATLAB
Certifications	Image and Video Processing, by Duke **Coursera**, Digital and Signal Processing, by EPFL **Coursera** , Neural Networks and Deep Learning, Machine Learning, and Hyperparameter tuning, Regularization and Optimization, by Deeplearning.ai **Coursera**.