Stanford

Jeya Maria Jose Valanarasu

Postdoctoral Scholar, Radiology

Bio

BIO

Dr. Jeya Maria Jose Valanarasu is a postdoctoral scholar working with the Stanford Machine Learning Group and the Center for Artificial Intelligence in Medicine and Imaging (AIMI Center). He leads the AI for Healthcare bootcamp with Dr. Andrew Ng, Dr. Curt Langlotz, and Dr. Nigam Shah which provides Stanford students an opportunity to engage in advanced research at the intersection of AI and healthcare.

He obtained his Ph.D. and M.S from Johns Hopkins University where he worked on various problems in Computer Vision, Machine Learning, and Healthcare. His research aims to overcome the challenges that arise when translating machine learning models to practical applications for healthcare and engineering sectors. His works have spanned over topics like designing effective deep architectures, model adaptability to changing environments, role of data and annotations, multi-modal learning and taming large models for computer vision and healthcare tasks. He has published over 25 peer-reviewed journal/conference articles at top venues and filed 3 U.S. patents. He has been awarded Amazon Research Fellowship 2022, Best Student Paper Awards at ICRA 2022, CVIP 2019, MICCAI Young Scientist Impact Award Finalist 2022, and the NIH MICCAI Award 2022. He has also served as a reviewer for multiple journals and conferences.

HONORS AND AWARDS

- Amazon Research Fellowship, Amazon (2022)
- Young Scientist Impact Award - Finalist, MICCAI (2022)
- NIH MICCAI Award, NIH (2022)
- Outstanding Paper Award, ICRA (2021)
- Best Student Paper Award, CVIP (2019)

STANFORD ADVISORS

- Curtis Langlotz, Postdoctoral Faculty Sponsor

LINKS

- https://jeya-maria-jose.github.io/research/: https://jeya-maria-jose.github.io/research/

Research & Scholarship

LAB AFFILIATIONS

- Andrew Ng (6/13/2023)
- Curtis Langlotz (6/12/2023)
- Nigam Shah (6/12/2023)

Publications

PUBLICATIONS

- **Fine-Context Shadow Detection using Shadow Removal**
  Valanarasu, J., Patel, V. M., IEEE
  IEEE COMPUTER SOC.2023: 1705-1714

- **KiU-Net: Overcomplete Convolutional Architectures for Biomedical Image and Volumetric Segmentation** *IEEE TRANSACTIONS ON MEDICAL IMAGING*
  Valanarasu, J., Sindagi, V. A., Hacihaliloglu, I., Patel, V. M.
  2022; 41 (4): 965-976

- **TRANSFORMER-BASED SAR IMAGE DESPECKLING**
  Perera, M. V., Bandara, W., Valanarasu, J., Patel, V. M., IEEE
  IEEE.2022: 751-754

- **Hyperspectral Pansharpening Based on Improved Deep Image Prior and Residual Reconstruction** *IEEE TRANSACTIONS ON GEOSCIENCE AND REMOTE SENSING*
  Bandara, W., Valanarasu, J., Patel, V. M.
  2022; 60

- **SAR DESPECKLING USING OVERCOMPLETE CONVOLUTIONAL NETWORKS**
  Perera, M. V., Bandara, W., Valanarasu, J., Patel, V. M., IEEE
  IEEE.2022: 401-404

- **SPIN Road Mapper: Extracting Roads from Aerial Images via Spatial and Interaction Space Graph Reasoning for Autonomous Driving**
  Bandara, W., Valanarasu, J., Patel, V. M., IEEE
  IEEE.2022

- **Orientation-Guided Graph Convolutional Network for Bone Surface Segmentation**
  Rahman, A., Bandara, W., Valanarasu, J., Hacihaliloglu, I., Patel, V. M., Wang, L., Dou, Q., Fletcher, P. T., Speidel, S., Li, S.
  SPRINGER INTERNATIONAL PUBLISHING AG.2022: 412-421

- **UNeXt: MLP-Based Rapid Medical Image Segmentation Network**
  Valanarasu, J., Patel, V. M., Wang, L., Dou, Q., Fletcher, P. T., Speidel, S., Li, S.
  SPRINGER INTERNATIONAL PUBLISHING AG.2022: 23-33

- **Simultaneous Bone and Shadow Segmentation Network Using Task Correspondence Consistency**
  Rahman, A., Valanarasu, J., Hacihaliloglu, I., Patel, V. M., Wang, L., Dou, Q., Fletcher, P. T., Speidel, S., Li, S.
  SPRINGER INTERNATIONAL PUBLISHING AG.2022: 330-339

- **TransWeather: Transformer-based Restoration of Images Degraded by Adverse Weather Conditions**
  Valanarasu, J., Yasarla, R., Patel, V. M., IEEE COMP SOC
  IEEE COMPUTER SOC.2022: 2343-2353

- **Exploring Overcomplete Representations for Single Image Deraining Using CNNs** *IEEE JOURNAL OF SELECTED TOPICS IN SIGNAL PROCESSING*
  Yasarla, R., Valanarasu, J., Patel, V. M.
  2021; 15 (2): 229-239

- **OVERCOMPLETE REPRESENTATIONS AGAINST ADVERSARIAL VIDEOS**
  Lo, S., Valanarasu, J., Patel, V. M., IEEE
  IEEE.2021: 1939-1943

- **Medical Transformer: Gated Axial-Attention for Medical Image Segmentation**
  Valanarasu, J., Oza, P., Hacihaliloglu, I., Patel, V. M., DeBruijne, M., Cattin, P. C., Cotin, S., Padoy, N., Speidel, S., Zheng, Y., Essert, C.
  SPRINGER INTERNATIONAL PUBLISHING AG.2021: 36-46

- **Over-and-Under Complete Convolutional RNN for MRI Reconstruction**
  Guo, P., Valanarasu, J., Wang, P., Zhou, J., Jiang, S., Patel, V. M., deBruijne, M., Cattin, P. C., Cotin, S., Padoy, N., Speidel, S., Zheng, Y., Essert, et al

SPRINGER INTERNATIONAL PUBLISHING AG.2021: 13-23

- **Overcomplete Deep Subspace Clustering Networks**
  Valanarasu, J., Patel, V. M., IEEE
  IEEE COMPUTER SOC.2021: 746-755

- **Learning to Segment Brain Anatomy From 2D Ultrasound With Less Data** *IEEE JOURNAL OF SELECTED TOPICS IN SIGNAL PROCESSING*
  Jose Valanarasu, J., Yasarla, R., Wang, P., Hacihaliloglu, I., Patel, V. M.
  2020; 14 (6): 1221-1234