Stanford



Magdalini Paschali

Postdoctoral Scholar, Radiology

Curriculum Vitae available Online

Bio

BIO

I am a Postdoctoral Scholar working with Prof. Akshay Chaudhari and Prof. David Larson in the Department of Radiology at Stanford focusing on evaluating the robustness of large-scale AI models and identifying early disease biomarkers.

Until August 2023, I was a Postdoctoral Scholar in the Computational Neuroimage Science Laboratory (CNS Lab) with Prof. Kilian M. Pohl working on multi-modal machine learning models that can improve the understanding, diagnosis, and treatment of neuropsychiatric disorders.

Previously I completed my PhD at the Chair for Computer Aided Medical Procedures at the Technical University of Munich under the supervision of Prof. Nassir Navab and my dissertation was titled "Learning Robust Representations for Medical Diagnosis". I am passionate about designing trustworthy deep learning methods for challenging applications.

HONORS AND AWARDS

- Best Oral Paper Award, Medical Imaging with Deep Learning (MIDL) (July 2024)
- Best Paper Award, International Workshop on PRedictive Intelligence In MEdicine - PRIME - MICCAI (September 2022)
- Best Paper Award, Uncertainty for Safe Utilization of Machine Learning in Medical Imaging - UNSURE - MICCAI (September 2021)
- Graduate Student Travel Award, Medical Image Computing and Computer Assisted Interventions (MICCAI) (October 2019)
- Best Poster Award, International Conference on Information Processing in Medical Imaging (IPMI) (June 2019)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Public Relations Officer, MICCAI Student Board (2017 - 2020)

PROFESSIONAL EDUCATION

- PhD, Technical University of Munich , Learning Robust Representations for Medical Diagnosis (2021)
- M.Sc., Technical University of Munich , Informatics (2017)
- B.Sc., Aristotle University of Thessaloniki , Informatics (2015)

STANFORD ADVISORS

- David Larson, Postdoctoral Research Mentor
- Akshay Chaudhari, Postdoctoral Faculty Sponsor

LINKS

- Personal Website: https://magdapaschali.com/
- Twitter Profile: https://twitter.com/magdapasc
- LinkedIn Profile: https://www.linkedin.com/in/magda-paschali-69612083/?originalSubdomain=de
- Google Scholar Profile: https://scholar.google.com/citations?user=KsGo-_QAAAAJ&hl=en&oi=ao

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My research focuses on utilizing machine learning models to enhance the understanding, diagnosis, and treatment of clinical disorders. I am interested in multi-modal learning, combining imaging data like MRI and CT scans with non-imaging data such as electronic health records, creating more holistic and accurate diagnostic models. I am also interested in the robustness of deep neural networks under domain shifts, investigating how models perform when faced with changes in input data distributions.

Finally, I am interested in early biomarker identification using AI model interpretability, to enable the early detection and targeted treatment of chronic disorders.

Publications

PUBLICATIONS

- **Merlin: a computed tomography vision-language foundation model and dataset.** *Nature*
  Blankemeier, L., Kumar, A., Cohen, J. P., Liu, J., Liu, L., Van Veen, D., Gardezi, S. J., Yu, H., Paschali, M., Chen, Z., Delbrouck, J. B., Reis, E., Holland, et al
  2026

- **Reporting checklist for foundation and large language models in medical research (REFINE): an international consensus guideline.** *Diagnostic and interventional radiology (Ankara, Turkey)*
  Mese, I., Akinci D'Antonoli, T., Bluethgen, C., Bressem, K., Cuocolo, R., Chaudhari, A., Tejani, A. S., Isaac, A., Ponsiglione, A., Meddeb, A., Khosravi, B., Le Guellec, B., Kahn, et al
  2026

- **Improving Performance, Robustness, and Fairness of Radiographic AI Models with Finely-Controllable Synthetic Data.** *Research square*
  Moroianu, S. L., Bluethgen, C., Chambon, P., Cherti, M., Delbrouck, J. B., Paschali, M., Price, B., Gichoya, J., Jitsev, J., Langlotz, C. P., Chaudhari, A. S.
  2025

- **Spectral Graph Sample Weighting for Interpretable Sub-cohort Analysis in Predictive Models for Neuroimaging.** *PRedictive Intelligence in MEdicine. PRIME (Workshop)*
  Paschali, M., Jiang, Y. H., Siegel, S., Gonzalez, C., Pohl, K. M., Chaudhari, A., Zhao, Q.
  2025; 15155: 24-34

- **Automated real-time assessment of intracranial hemorrhage detection AI using an ensembled monitoring model (EMM).** *NPJ digital medicine*
  Fang, Z., Johnston, A., Cheuy, L. Y., Na, H. S., Paschali, M., Gonzalez, C., Armstrong, B. A., Koirala, A., Laurel, D., Campion, A. W., Iv, M., Chaudhari, A. S., Larson, et al
  2025; 8 (1): 608

- **Automated Real-time Assessment of Intracranial Hemorrhage Detection AI Using an Ensembled Monitoring Model (EMM).** *Research square*
  Fang, Z., Johnston, A., Cheuy, L., Na, H. S., Paschali, M., Gonzalez, C., Armstrong, B. A., Koirala, A., Laurel, D., Campion, A. W., Iv, M., Chaudhari, A. S., Larson, et al
  2025

- **Assessing Completeness of Clinical Histories Accompanying Imaging Orders Using Adapted Open-Source and Closed-Source Large Language Models.** *Radiology*
  Larson, D. B., Koirala, A., Cheuy, L. Y., Paschali, M., Van Veen, D., Na, H. S., Petterson, M. B., Fang, Z., Chaudhari, A. S.

2025; 314 (2): e241051

- **Foundation Models in Radiology: What, How, Why, and Why Not.** *Radiology*
  Paschali, M., Chen, Z., Blankemeier, L., Varma, M., Youssef, A., Bluethgen, C., Langlotz, C., Gatidis, S., Chaudhari, A.
  2025; 314 (2): e240597

- **SOE: SO(3)-Equivariant 3D MRI Encoding**
  He, S., Paschali, M., Ouyang, J., Masood, A., Chaudhari, A., Adeli, E.
  edited by Bathula, D. R., Nirmala, A. B., Dvornek, N. C., Govindarajan, S. T., Habes, M., Kumar, Nebli, A., Wolfers, T., Xiao, Y.
  SPRINGER INTERNATIONAL PUBLISHING AG.2025: 68-77

- **Multi-domain predictors of grip strength differentiate individuals with and without alcohol use disorder.** *Addiction biology*
  Paschali, M., Zhao, Q., Sassoon, S. A., Pfefferbaum, A., Sullivan, E. V., Pohl, K. M.
  2024; 29 (11): e70007

- **Merlin: A Vision Language Foundation Model for 3D Computed Tomography.** *Research square*
  Blankemeier, L., Cohen, J. P., Kumar, A., Veen, D. V., Gardezi, S., Paschali, M., Chen, Z., Delbrouck, J. B., Reis, E., Truyts, C., Bluethgen, C., Jensen, M., Ostmeier, et al
  2024

- **Identifying high school risk factors that forecast heavy drinking onset in understudied young adults.** *Developmental cognitive neuroscience*
  Zhao, Q., Paschali, M., Dehoney, J., Baker, F. C., de Zambotti, M., De Bellis, M. D., Goldston, D. B., Nooner, K. B., Clark, D. B., Luna, B., Nagel, B. J., Brown, S. A., Tapert, et al
  2024; 68: 101413

- **SINR: Spline-enhanced implicit neural representation for multi-modal registration**
  Sideri-Lampretsa, V., McGinnis, J., Qiu, H., Paschali, M., Simson, W., Rueckert, D.
  edited by Burgos, N., Petitjean, C., Vakalopoulou, M., Christodoulidis, S., Coupe, P., Delingette, H., Lartizien, C., Mateus, D.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2024: 1462-1474

- **Multimodal graph attention network for COVID-19 outcome prediction.** *Scientific reports*
  Keicher, M., Burwinkel, H., Bani-Harouni, D., Paschali, M., Czempiel, T., Burian, E., Makowski, M. R., Braren, R., Navab, N., Wendler, T.
  2023; 13 (1): 19539

- **Investigating pulse-echo sound speed estimation in breast ultrasound with deep learning.** *Ultrasonics*
  Simson, W. A., Paschali, M., Sideri-Lampretsa, V., Navab, N., Dahl, J. J.
  2023; 137: 107179

- **Interactive Segmentation for COVID-19 Infection Quantification on Longitudinal CT Scans** *IEEE ACCESS*
  Foo, M., Kim, S., Paschali, M., Goli, L., Burian, E., Makowski, M., Braren, R., Navab, N., Wendler, T.
  2023; 11: 77596-77607

- **Self-supervised Learning for Physiologically-Based Pharmacokinetic Modeling in Dynamic PET**
  De Benetti, F., Simson, W., Paschali, M., Sari, H., Rominger, A., Shi, K., Navab, N., Wendler, T.
  edited by Madabhushi, A., Greenspan, H., Mousavi, P., Salcudean, S., Duncan, J., Syeda-Mahmood, T., Taylor, R.
  SPRINGER INTERNATIONAL PUBLISHING AG.2023: 290-299

- **Bridging the Gap between Deep Learning and Hypothesis-Driven Analysis via Permutation Testing.** *PRedictive Intelligence in MEdicine. PRIME (Workshop)*
  Paschali, M., Zhao, Q., Adeli, E., Pohl, K. M.
  2022; 13564: 13-23

- **Detecting negative valence symptoms in adolescents based on longitudinal self-reports and behavioral assessments.** *Journal of affective disorders*
  Paschali, M., Kiss, O., Zhao, Q., Adeli, E., Podhajsky, S., Muller-Oehring, E. M., Gotlib, I. H., Pohl, K. M., Baker, F. C.
  2022

- **OperA: Attention-Regularized Transformers for Surgical Phase Recognition**
  Czempiel, T., Paschali, M., Ostler, D., Kim, S., Busam, B., Navab, N.
  edited by DeBruijne, M., Cattin, P. C., Cotin, S., Padoy, N., Speidel, S., Zheng, Y., Essert, C.

SPRINGER INTERNATIONAL PUBLISHING AG.2021: 604-614

- **Rethinking Ultrasound Augmentation: A Physics-Inspired Approach**
  Tirindelli, M., Eilers, C., Simson, W., Paschali, M., Azampour, M., Navab, N.
  edited by DeBruijne, M., Cattin, P. C., Cotin, S., Padoy, N., Speidel, S., Zheng, Y., Essert, C.
  SPRINGER INTERNATIONAL PUBLISHING AG.2021: 690-700

- **Longitudinal Quantitative Assessment of COVID-19 Infection Progression from Chest CTs**
  Kim, S., Goli, L., Paschali, M., Khakzar, A., Keicher, M., Czempiel, T., Burian, E., Braren, R., Navab, N., Wendler, T.
  edited by DeBruijne, M., Cattin, P. C., Cotin, S., Padoy, N., Speidel, S., Zheng, Y., Essert, C.
  SPRINGER INTERNATIONAL PUBLISHING AG.2021: 273-282

- **Ultrasound-Guided Robotic Navigation with Deep Reinforcement Learning**
  Hase, H., Azampour, M., Tirindelli, M., Paschali, M., Simson, W., Fatemizadeh, E., Navab, N., IEEE
  IEEE.2020: 5534-5541

- **SIGNAL CLUSTERING WITH CLASS-INDEPENDENT SEGMENTATION**
  Gasperini, S., Paschali, M., Hopke, C., Wittmann, D., Navab, N., IEEE
  IEEE.2020: 3982-3986

- **Manifold Exploring Data Augmentation with Geometric Transformations for Increased Performance and Robustness**
  Paschali, M., Simson, W., Roy, A., Goebl, R., Wachinger, C., Navab, N.
  edited by Chung, A. C., Gee, J. C., Yushkevich, P. A., Bao, S.
  SPRINGER INTERNATIONAL PUBLISHING AG.2019: 517-529

- **3DQ: Compact Quantized Neural Networks for Volumetric Whole Brain Segmentation**
  Paschali, M., Gasperini, S., Roy, A., Fang, M., Navab, N.
  edited by Shen, D., Liu, T., Peters, T. M., Staib, L. H., Essert, C., Zhou, S., Yap, P. T., Khan, A.
  SPRINGER INTERNATIONAL PUBLISHING AG.2019: 438-446

- **Generalizability vs. Robustness: Investigating Medical Imaging Networks Using Adversarial Examples**
  Paschali, M., Conjeti, S., Navarro, F., Navab, N.
  edited by Frangi, A. F., Schnabel, J. A., Davatzikos, C., AlberolaLopez, C., Fichtinger, G.
  SPRINGER INTERNATIONAL PUBLISHING AG.2018: 493-501