Steven Hicks, Ph.D.

steven@simula.com +47 950 88 557 +1 503 851 9289 https://stevenhicks.xyz Scholar LinkedIn stevenah

Bio

I am a Norwegian-American researcher and technologist with a Ph.D. in Computer Science. My work focuses on bridging cutting-edge artificial intelligence (AI) research with practical applications, particularly in multi-modal systems and healthcare. I am passionate about developing AI systems that are transparent, ethical, and robust. With a hands-on approach to software development, I enjoy crafting tools and algorithms that address meaningful challenges, improve lives, and advance our understanding across disciplines.

Skills

Programming Languages	Proficient in **Java**, **SQL**, **C**, **C++**, **C#**, **Python**, and **JavaScript**. Experience with **Julia**, **Rust**, and **Go**.
Databases	Skilled in database design and management using **SQL**, **MySQL**, **PostgreSQL**, and familiarity with NoSQL databases like **MongoDB**.
Software Development	Experience with the full software development lifecycle, including requirements gathering, design, implementation, testing, and maintenance. **Agile** and **Scrum** methodologies.
Web Development	Skilled in both front-end and back-end development. Comfortable with **React**, **Next.js**, **Remix**, **Tailwind**, **Angular**, **Node.js**, and **RESTful API** integration.
DevOps	Practical experience with CI/CD pipelines using **Jenkins**, **GitHub Workflows**, **Docker**, **AWS**, and **Azure** cloud services. Also have experience deploying machine learning models (**MLOps**).
Machine Learning	Proficient with the entire machine learning pipeline, from dataset development to model deployment. Experience with **PyTorch**, **TensorFlow**, **Scikit-learn**, and **Databricks**. Skilled in working with large language models (LLMs) such as **GPT** and **LLaMA**, including fine-tuning for domain-specific tasks.
Data Analysis	Proficient in data analysis with **Python** (**Pandas**, **NumPy**, **Matplotlib**), **MATLAB**, and **R**.

Work Experience

Senior Research Scientist, SimulaMet *oct 2021 – present*
- Researched and developed ML methods, including traditional ML **(Scikit-learn, Weka)** and deep learning **(CNNs, LSTMs, Transformers)**, applied primarily in medicine, but also in sports science, telecommunication, and fundamental AI research.
- Published extensively in high-impact conferences and journals, gaining **over 3,500 citations** and an **h-index of 30**.
- Supervised bachelor's, master's, PhD students, and postdoctoral researchers.
- **Secured several million NOK funding** by co-authoring grant proposals and through interdisciplinary collaborations.
- Organized international challenges and workshops on ML, attracting over **500 participants globally**.

Chief Technology Officer, Innsikt.AI *june 2023 – present*
- Developed a platform for interacting with virtual child avatars to train professionals in holding child interviews.
- Built systems using traditional **(NLP)** and modern **(LLMs, LangChain)** for avatar interactions, emotion simulation, text analysis, user management, and feedback evaluation.
- Implemented core systems using a **JavaScript** modern web stack **(Remix, Tailwind)** and **Python** backend **(FastAPI, SQLAlchemy, PostgreSQL)**.
- Ensured platform scalability and security by integrating best practices in cloud infrastructure **(AWS, Terraform)**.
- Secured several million NOK funding by preparing technical proposals for venture capital and industry grants.

Adjunct Associate Professor, OsloMet *nov 2023 – present*
- Developed ML **(Traditional ML, Deep Learning)** solutions for diagnosing and treating musculoskeletal disorders.
- Contributed to successful grant applications and research proposals.

Senior Data Scientist, ForzaSys *aug 2022 – nov 2023*
- Researched and developed algorithms, including traditional ML and deep learning methods **(PyTorch, Tensorflow)**, for automated soccer match video clipping, highlight generation, and event detection.
- Designed and implemented a web-based tool for match-fixing detection **(Next.js, SQLite)**.

Front-End Developer, DHIS2 *jan 2017 – sept 2018*
- Enhanced table rendering capabilities, improving application performance and supporting larger datasets.
- Ported multiple applications from vanilla **JavaScript** to a modern stack **(React, Redux)**.

Full-Stack Developer, Axios AS *june 2014 – aug 2016*
- Designed and implemented loan management software for a mortgage company **(C#, .NET, and Azure)**.

Selected Projects

EndoNet, American Society for Gastrointestinal Endoscopy *2023*
- Designed and implemented a system for collectiong and annotating colonoscopy data from various healthcare centers across the United States, enhancing data accessibility and analysis.

VALIDATE, European Union *2023*
- Contributed to the VALIDATE project, focusing on Trustworthy AI and Clinical Model Development.
- Responsible for tasks related to ethical use and reliability of AI in clinical settings.

Smittestopp, Simula Research Laboratory *2020*
- Integral to the data science team for Norway's COVID-19 contact tracing app, Smittestopp.
- Responsible for visualizing user movements, validating contact occurrences, and detecting transportation methods.

Selected Projects (continued)

- **Fish Feeding, Spillfree Analytics** *2018*
  - Developed machine learning algorithms for fish identification, automating feeding processes in aquaculture settings.
- **Nyss, Red Cross** *2018*
  - Contributed to the initial development of Red Cross' disease prevention platform Nyss.
- **Data Store Application, DHIS2** *2017*
  - Developed a JavaScript-based data management web application for the DHIS2 ecosystem at the University of Oslo.
  - Successfully integrated into the official DHIS2 platform, leading to part-time employment.
- **Subscription Application, DNB** *2017*
  - Engineered a financial analytics tool to analyze online bank transactions.
  - Enabled social sharing features for subscriptions via Facebook.
  - Built using a React and Redux, interfaced with DNB's internal APIs.

Activities

- **Member of the Educational Council, NORA** *2023 – present*
  - Contributed to shaping the educational strategies in AI across Norway as part of NORA's educational council.
- **Challenge Organizer, Various International Workshops** *2018 – present*
  - Organized and led multiple challenges across reputable workshops such as ACM MultiMedia, ICPR, ImageCLEF, DLAMC, ICMR, and Nordic AI Meet.
- **Main Organizing Committee Member, MediaEval** *2018 – present*
  - Part of the central organization of MediaEval, an annual international workshop gathering hundreds of participants.
  - Responsible for overseeing key aspects of the workshop, including program planning and speaker coordination.
- **Conference Organizer, Norwegian Artificial Intelligence Society (NAIS)** *2022*
  - Responsible for developing the website, participant outreach, and booking keynote speakers.
- **Editor, SIGMM Records** *2019 – 2023*
  - Served as an editor for SIGMM Records, responsible for the interview section.
- **Journal Club Coordinator, OsloMet AI Club** *2019 – 2020*
  - Initiated and coordinated a bi-weekly journal club for the AI Lab at OsloMet.

Teaching Experience

- **Master's Course, Big Data Curation, Pipelines, and Management, BI Norwegian Business School** *aug 2023 - dec 2023*
  - Instructed a master's course on machine learning and big data at BI Norwegian Business School.
- **Bachelor Course, Digital Technology, Kristiania University College** *jan 2020 - june 2020*
  - Taught an undergraduate course on computer science basics for first-year students at Kristiania University College.
- **Bachelor Course, Machine Learning, Kristiania University College** *aug 2019 - dec 2019*
  - Held an undergraduate course covering topics on general machine learning algorithms and deep learning.
- **Master Course, Emerging Technologies, Kristiania University College** *aug 2019 - dec 2019*
  - Taught the master-level course on emerging technologies.

Education

- **Ph.D. Computer Science, Oslo Metropolitan University, Norway** *aug 2018 – june 2022*
  - Focused on developing methodologies to improve transparency and interpretability in AI systems used in healthcare. Supervised by Michael Riegler and På Halvorsen.
- **M.Sc. Computer Science, University of Oslo, Norway** *aug 2016 – june 2018*
  - Developed a system for automatic report generation of endoscopy procedures with a focus on explainable AI.
- **B.Sc. Computer Science, University of Agder, Norway** *aug 2012 – june 2015*
  - Developed a cross-platform mobile application for the Norwegian Seamen's Church using Ionic Framework.

Miscellaneous

Awards and Achievements

- **Winner of the 2021 Endoscopy Computer Vision Challenge**
  Recognized for developing system that improves the accuracy and efficiency of endoscopic diagnostics.
- **Best of DDW ASGE**
  Awarded for innovative research that enhances the automation and precision of endoscopic report generation.

Interests

- Self-hosting servers for application development, internal tooling, and infrastructure management. Includes setting up VPN gateways, database proxies, continuous integration pipelines, and secure remote access to analytics or ML services. Also includes running and fine-tuning language models (LLMs) in a homelab environment for experimentation and private inference.
- Web3, DeFi, and NFT infrastructure. Interest in smart contract development, decentralized finance protocols, token standards, and privacy-preserving cryptographic systems including zero-knowledge proofs.
- Synthetic data pipelines for regulated domains (e.g., healthcare, finance). Focus on generative model tuning, data distribution validation, and integrating synthetic data into ML workflows for model robustness and privacy compliance (e.g., GDPR, HIPAA).

Master Student Supervision

2025
- **Jony Karmakar**
  Thesis: "Automated Foul Detection and Card Prediction in Soccer"

2024
- **Thomas Iversen**
  Thesis: "LangExplain - A framework for using LLMs to explain the output of other LLMs"
- **Pål Bentsen**
  Thesis: "Semi-Supervised Learning and Data Refinement for Sperm Detection"
- **Oskar Pieniak**
  Thesis: "Generative Machine Learning for Precision Medicine"
- **Mehdi Houshmand Sarkhoosh**
  Thesis: "Multimodal AI-Based Summarization and Storytelling for Soccer on Social Media"
- **Sayed Mohammad Majidi Dorcheh**
  Thesis: "SmartCrop: AI-Based Cropping of Sports Videos"

2023
- **Lars Hoel**
  Thesis: "Using Soccer Athlete GPS Monitoring Data to Visualize and Predict Features"
- **Robin Rognerud**
  Thesis: "AI-based clipping of booking events in soccer"
- **Ole Algoritme**
  Thesis: "Transforming Facial Landmarks for Virtual Avatar Facial Animation"
- **Mathias Menkerud Sagbakken**
  Thesis: "Using Machine Learning to Predict Elite Female Athletes' Readiness to Play in Soccer"
- **Anna Linnea Jarmann**
  Thesis: "Identifying Injury Risk Factors for Elite Soccer Teams Using Survival Analysis"
- **Alexander Klougman Pishva**
  Thesis: "Exploring the Potential of Diffusion Models in Generating Synthetic Polyps"
- **Eirik D. Helland**
  Thesis: "Tackling Lower-Resource Language Challenges: A Comparative Study of Norwegian Pre-Trained BERT Models and Traditional Approaches for Football Article Paragraph Classification"
- **Sander Sæther**
  Thesis: "Comparing Recurrent Neural Networks for ECG Analysis"
- **Mohammad Awais**
  Thesis: "An Investigation into using Deep Convolutional Neural Networks for ECG Analysis"
- **Syeda Ambreen Yawar**
  Thesis: "An evaluation of using transformer networks for ECG Analysis"

2022
- **Felicia Ly Jacobsen**
  Thesis: "Estimating Predictive Uncertainty in Gastrointestinal Image Segmentation"

2021
- **Lucas Charpentier**
  Thesis: "To prune or not to prune: Exploring the effects of nodes in neural networks"
- **Joakim Olav Valand and Haris Kadragic**
  Thesis: "Machine learning-based approach for automated clipping of soccer events-Using scene boundary detection and logo detection"
- **Rabindra Khadka**
  Thesis: "Meta-learning for Medical Image Segmentation"
- **Markus Stige**
  Thesis: "Evaluation of multi-modal approaches for automatic spotting and classification of events in soccer games"

2020
- **Henrik Svoren**
  Thesis: "Emotional Mario-Using Super Mario Bros. to Train Emotional Intelligent Machines"
- **Espen Næss**
  Thesis: "Pyramidal Segmentation of Medical Images via Generative Adversarial Networks"
- **Martin Kristoffer Svensen**
  Thesis: "Reidentifying Anonymised Data Using Machine Learning"
- **Lucas Georges Gabriel Charpentier**
  Thesis: "To prune or not to prune: Exploring the effects of nodes in neural networks"
- **Olav Andre Nergård Rongved**
  Thesis: "Automatic event detection in soccer videos"
- **Oda Olsen Nedrejord**
  Thesis: "Artificial Video Generation for Improved Performance on Polyp Detection"
- **Daniel Steen-Brungot**
  Thesis: "Predictive approach to pose estimation in Virtual Reality"

2019
- **Mathias Kirkerød**
  Thesis: "Unsupervised preprocessing of medical imaging data with generative adversarial networks"
- **Joakim Ihle Frogner**
  Thesis: "One-Dimensional Convolutional Neural Networks on Motor Activity Measurements in Detection of Depression"
- **Edvarda Regine Winlund Eriksen**
  Thesis: "A machine learning approach to improve consistency in user-driven medical image analysis"

Master Student Supervision (continued)

Marius Alexander Sandberg
Thesis: "Music and Sport: An Explorative Study using Unsupervised Machine Learning"

Bachelor Student Supervision

2023 **Jessica Chackyan, Nourhat Hassan, Aya Abdelhady, and Aleksander Korkh**
Thesis: "GAME-FIXING: Dashboard for analysing subscriber data to detect any fraud actions"

2022 **Bernadette Fanni Finheim, Hanna Bækken Nilsen, Tonje Martine Lorgen Kirkholt, and Helene Birkeflet Prescott**
Thesis: "AI-basert analyse av tidsseriedata fra atleter"

Publications

Selected Papers

1. S. Hicks, I. Strümke, V. Thambawita, *et al.*, "On evaluation metrics for medical applications of artificial intelligence," *Scientific reports*, 2022.
2. A. H. Ahmed, S. Hicks, M. A. Riegler, and A. Elmokashfi, "Predicting high delays in mobile broadband networks," *IEEE Access*, 2021.
3. S. Hicks, J. L. Isaksen, V. Thambawita, *et al.*, "Explaining deep neural networks for knowledge discovery in electrocardiogram analysis," *Scientific reports*, 2021.
4. S. Hicks, A. Stautland, O. B. Fasmer, *et al.*, "Hyperaktiv: An activity dataset from patients with attention-deficit/hyperactivity disorder (adhd)," in *Proceedings of the 12th ACM Multimedia Systems Conference*, 2021.
5. P. H. Smedsrud, V. Thambawita, S. Hicks, *et al.*, "Kvasir-capsule, a video capsule endoscopy dataset," *Scientific Data*, 2021.
6. H. Borgli, V. Thambawita, P. H. Smedsrud, *et al.*, "Hyperkvasir, a comprehensive multi-class image and video dataset for gastrointestinal endoscopy," *Scientific data*, 2020.
7. T. B. Haugen, S. Hicks, J. M. Andersen, *et al.*, "Visem: A multimodal video dataset of human spermatozoa," in *Proceedings of the 10th ACM Multimedia Systems Conference*, 2019.
8. S. Hicks, J. M. Andersen, O. Witczak, *et al.*, "Machine learning-based analysis of sperm videos and participant data for male fertility prediction," *Scientific reports*, 2019.
9. S. Hicks, S. Eskeland, M. Lux, *et al.*, "Mimir: An automatic reporting and reasoning system for deep learning based analysis in the medical domain," in *Proceedings of the 9th ACM Multimedia Systems Conference*, 2018.
10. S. Hicks, K. Pogorelov, T. de Lange, *et al.*, "Comprehensible reasoning and automated reporting of medical examinations based on deep learning analysis," in *Proceedings of the 9th ACM Multimedia Systems Conference*, 2018.

Journal Articles

1. C. Midoglu, A. Kjæreng Winther, M. Boeker, *et al.*, "A large-scale multivariate soccer athlete health, performance, and position monitoring dataset," *Scientific Data*,
2. S. Ali, N. Ghatwary, D. Jha, *et al.*, "Assessing generalisability of deep learning-based polyp detection and segmentation methods through a computer vision challenge," *Scientific Reports*, 2024.
3. S. Hicks, A. Storås, M. Riegler, *et al.*, "Visual explanations for polyp detection: How medical doctors assess intrinsic versus extrinsic explanations," *PLOS One*, 2024.
4. H. Svennevik, S. A. Hicks, M. A. Riegler, T. Storelvmo, and H. L. Hammer, "A dataset for predicting cloud cover over europe," *Scientific Data*, 2024.
5. A. Al Outa, S. Hicks, V. Thambawita, *et al.*, "Cellular, a cell autophagy imaging dataset," *Scientific Data*, 2023.
6. T. B. Haugen, O. Witczak, S. Hicks, L. Björndahl, J. M. Andersen, and M. A. Riegler, "Sperm motility assessed by deep convolutional neural networks into who categories," *Scientific Reports*, 2023.
7. C. Midoglu, M. Hammou, A. Sharifi, *et al.*, "Experiences and lessons learned from a crowdsourced-remote hybrid user survey framework for multimedia evaluation," *Encyclopedia with Semantic Computing and Robotic Intelligence*, 2023.
8. A. M. Storås, O. E. Andersen, S. Lockhart, *et al.*, "Usefulness of heat map explanations for deep-learning-based electrocardiogram analysis," *Diagnostics*, 2023.
9. V. Thambawita, S. Hicks, A. M. Storås, *et al.*, "Visem-tracking, a human spermatozoa tracking dataset," *Scientific Data*, 2023.
10. S. Z. Hassan, K. Ahmad, S. Hicks, *et al.*, "Visual sentiment analysis from disaster images in social media," *Sensors*, 2022.
11. S. Hicks, V. Thambawita, A. Storås, *et al.*, "Automatic tracking of the icsi procedure using deep learning," *Human Reproduction*, 2022.

12 S. Hicks, I. Strümke, V. Thambawita, *et al.*, "On evaluation metrics for medical applications of artificial intelligence," *Scientific reports*, 2022.

13 J. L. Isaksen, S. Hicks, V. Thambawita, *et al.*, "Baseline filtering alleviates generalization issues for neural networks for electrocardiogram analysis," *Journal of Electrocardiology*, 2022.

14 R. Khadka, D. Jha, S. Hicks, *et al.*, "Meta-learning with implicit gradients in a few-shot setting for medical image segmentation," *Computers in Biology and Medicine*, 2022.

15 T.-A. S. Nordmo, O. Kvalsvik, S. O. Kvalsund, *et al.*, "Fish ai: Sustainable commercial fishing," *Nordic Machine Intelligence (NMI)*, 2022.

16 C. Pires Veríssimo, L. G. A. Filha, F. J. M. da Silva, *et al.*, "Short-term functional and morphological changes in primary cultures of trigeminal ganglion cells," 2022.

17 P. Salehi, S. Z. Hassan, M. Lammerse, *et al.*, "Synthesizing a talking child avatar to train interviewers working with maltreated children," *Big Data and Cognitive Computing*, 2022.

18 V. Thambawita, S. Hicks, A. Storås, *et al.*, "P-108 real-time deep learning based multi object tracking of spermatozoa in fresh samples," *Human Reproduction*, 2022.

19 V. Thambawita, P. Salehi, S. A. Sheshkal, *et al.*, "Singan-seg: Synthetic training data generation for medical image segmentation," *PloS one*, 2022.

20 A. H. Ahmed, S. Hicks, M. A. Riegler, and A. Elmokashfi, "Predicting high delays in mobile broadband networks," *IEEE Access*, 2021.

21 T. Haugen, S. Hicks, O. Witczak, J. Andersen, L. Björndahl, and M. Riegler, "Assessment of sperm motility according to who classification using convolutional neural networks," *Human Reproduction*, 2021.

22 S. Hicks, D. Jha, K. Pogorelov, *et al.*, "Mediaeval 2020: Multimedia benchmark workshop 2020, working notes proceedings of the mediaeval 2020 workshop online, 14-15 december 2020," 2021.

23 S. Hicks, J. L. Isaksen, V. Thambawita, *et al.*, "Explaining deep neural networks for knowledge discovery in electrocardiogram analysis," *Scientific reports*, 2021.

24 S. Hicks, D. Jha, V. Thambawita, *et al.*, "Medai: Transparency in medical image segmentation," *Nordic Machine Intelligence*, 2021.

25 D. Jha, S. Ali, S. Hicks, *et al.*, "A comprehensive analysis of classification methods in gastrointestinal endoscopy imaging," *Medical image analysis*, 2021.

26 J. K. Kanters, S. Hicks, J. L. Isaksen, *et al.*, "Deep learning neural network can measure ecg intervals and amplitudes accurately," 2021.

27 R. Khadga, D. Jha, S. Ali, *et al.*, "Few-shot segmentation of medical images based on meta-learning with implicit gradients," *Computers in Biology and Medicine*, 2021.

28 O. A. Nergård Rongved, M. Stige, S. Hicks, *et al.*, "Automated event detection and classification in soccer: The potential of using multiple modalities," *Machine Learning and Knowledge Extraction*, 2021.

29 M. A. Riegler, M. H. Stensen, O. Witczak, *et al.*, "Artificial intelligence in the fertility clinic: Status, pitfalls and possibilities," *Human Reproduction*, 2021.

30 O. A. N. Rongved, S. Hicks, V. Thambawita, *et al.*, "Using 3d convolutional neural networks for real-time detection of soccer events," *International Journal of Semantic Computing*, 2021.

31 O. A. N. Rongved, M. Stige, S. Hicks, and V. L. Thambawita, "Cise midoglu, evi zouganeli, dag johansen, michael alexander riegler, and pål halvorsen. 2021. automated event detection and classification in soccer: The potential of using multiple modalities," *Machine Learning and Knowledge Extraction*, 2021.

32 P. H. Smedsrud, V. Thambawita, S. Hicks, *et al.*, "Kvasir-capsule, a video capsule endoscopy dataset," *Scientific Data*, 2021.

33 H. Svennevik, M. A. Riegler, S. Hicks, T. Storelvmo, and H. L. Hammer, "Prediction of cloud fractional cover using machine learning," *Big Data and Cognitive Computing*, 2021.

34 V. Thambawita, J. L. Isaksen, S. Hicks, *et al.*, "Deepfake electrocardiograms using generative adversarial networks are the beginning of the end for privacy issues in medicine," *Scientific reports*, 2021.

35 V. Thambawita, I. Strümke, S. Hicks, P. Halvorsen, S. Parasa, and M. A. Riegler, "Impact of image resolution on deep learning performance in endoscopy image classification: An experimental study using a large dataset of endoscopic images," *Diagnostics*, 2021.

36 V. L. Thambawita, S. Hicks, I. Strümke, M. A. Riegler, P. Halvorsen, and S. Parasa, "Impact of image resolution on convolutional neural networks performance in gastrointestinal endoscopy," *Gastroenterology*, 2021.

37 V. L. Thambawita, I. Strümke, S. Hicks, M. A. Riegler, P. Halvorsen, and S. Parasa, "Data augmentation using generative adversarial networks for creating realistic artificial colon polyp images: Validation study by endoscopists," *Gastrointestinal Endoscopy*, 2021.

38 J. O. Valand, H. Kadragic, S. Hicks, *et al.*, "Ai-based video clipping of soccer events," *Machine Learning and Knowledge Extraction*, 2021.

39 H. Borgli, V. Thambawita, P. H. Smedsrud, *et al.*, "Hyperkvasir, a comprehensive multi-class image and video dataset for gastrointestinal endoscopy," *Scientific data*, 2020.

40 E. Garcia-Ceja, V. Thambawita, S. Hicks, *et al.*, "Htad: A home-tasks activities dataset with wrist-accelerometer and audio features," 2020.

41 M. Larson, S. Hicks, M. Constantin, *et al.*, "Mediaeval 2019: Multimedia benchmark workshop working notes proceedings of the mediaeval 2019 workshop sophia antipolis, france, 27-30 october 2019," 2020.

42 S. Hicks, J. M. Andersen, O. Witczak, *et al.*, "Machine learning-based analysis of sperm videos and participant data for male fertility prediction," *Scientific reports*, 2019.

43 S. Hicks, P. H. Smedsrud, M. A. Riegler, *et al.*, "Deep learning for automatic generation of endoscopy reports," *Gastrointestinal Endoscopy*, 2019.

44 S. Hicks, P. H. Smedsrud, P. Halvorsen, and M. Riegler, "Deep learning based disease detection using domain specific transfer learning.," *MediaEval*, 2018.

Conference Proceedings

1 T. T. Do, M. A. Vu, H. T. Ly, *et al.*, "Blockwise principal component analysis for monotone missing data imputation and dimensionality reduction," 2024.

2 S. Hicks, A. Storås, P. Halvorsen, T. de Lange, M. Riegler, and V. Thambawita, "Overview of imageclefmedical 2023-medical visual question answering for gastrointestinal tract," in *CLEF2023 Working Notes, CEUR Workshop Proceedings, CEUR-WS. org, Thessaloniki, Greece*, 2023.

3 B. Ionescu, H. Müller, A. Drăgulinescu, *et al.*, "Overview of imageclef 2023: Multimedia retrieval in medical, socialmedia and recommender systems applications," in *Experimental IR Meets Multilinguality, Multimodality, and Interaction, Proceedings of the 14th International Conference of the CLEF Association (CLEF 2023), Springer Lecture Notes in Computer Science LNCS, Thessaloniki, Greece*, 2023.

4 B. Ionescu, H. Müller, A. M. Drăgulinescu, *et al.*, "Imageclef 2023 highlight: Multimedia retrieval in medical, social media and content recommendation applications," in *European Conference on Information Retrieval*, 2023.

5 D. Jha, V. Sharma, N. Dasu, *et al.*, "Gastrovision: A multi-class endoscopy image dataset for computer aided gastrointestinal disease detection," in *Proceedings of the ICML Workshop on Machine Learning for Multimodal Healthcare Data*, 2023.

6 T. Nguyen, A. M. Storås, V. Thambawita, S. Hicks, P. Halvorsen, and M. A. Riegler, "Multimedia datasets: Challenges and future possibilities," in *International Conference on Multimedia Modeling*, 2023.

7 A. K. Pishva, V. Thambawita, J. Torresen, and S. Hicks, "Repolyp: A framework for generating realistic colon polyps with corresponding segmentation masks using diffusion models," in *2023 IEEE 36th International Symposium on Computer-Based Medical Systems (CBMS)*, 2023.

8 M. A. Riegler, V. Thambawita, A. Chatterjee, *et al.*, "Scopesense: An 8.5-month sport, nutrition, and lifestyle lifelogging dataset," in *International Conference on Multimedia Modeling*, 2023.

9 A. H. Ahmed, M. A. Riegler, S. Hicks, and A. Elmokashfi, "Rcad: Real-time collaborative anomaly detection system for mobile broadband networks," in *Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining*, 2022.

10 M. Hammou, C. Midoglu, S. Hicks, *et al.*, "Huldra: A framework for collecting crowdsourced feedback on multimedia assets," in *Proceedings of the 13th ACM Multimedia Systems Conference*, 2022.

11 S. Hicks, V. Thambawita, A. Storas, *et al.*, "Automatic tracking of the icsi procedure using deep learning," in *Human Reproduction*, 2022.

12 A. Husa, C. Midoglu, M. Hammou, *et al.*, "Automatic thumbnail selection for soccer videos using machine learning," in *Proceedings of the 13th ACM Multimedia Systems Conference*, 2022.

13 F. L. Jacobsen, S. Hicks, P. Halvorsen, and M. A. Riegler, "Estimating predictive uncertainty in gastrointestinal polyp segmentation," in *2022 IEEE 35th International Symposium on Computer-Based Medical Systems (CBMS)*, 2022.

14 C. Midoglu, A. Storås, S. S. Sabet, *et al.*, "Experiences and lessons learned from a crowdsourced-remote hybrid user survey framework," in *2022 IEEE International Symposium on Multimedia (ISM)*, 2022.

15 T.-A. S. Nordmo, A. B. Ovesen, B. A. Juliussen, *et al.*, "Njord: A fishing trawler dataset," in *Proceedings of the 13th ACM Multimedia Systems Conference*, 2022.

16 A. M. Storås, M. A. Riegler, T. B. Haugen, *et al.*, "Automatic unsupervised clustering of videos of the intracytoplasmic sperm injection (icsi) procedure," in *Symposium of the Norwegian AI Society*, 2022.

17 V. Thambawita, S. Hicks, A. Storas, *et al.*, "Real-time deep learning based multi object tracking of spermatozoa in fresh samples," in *Human Reproduction*, 2022.

18 V. Thambawita, S. Hicks, A. M. Storås, *et al.*, "Medico multimedia task at mediaeval 2022: Transparent tracking of spermatozoa," in *Proceedings of MediaEval 2022 CEUR Workshop*, 2022.

19 G. A. Baugerud, M. S. Johnson, R. Klingenberg Røed, *et al.*, "Multimodal virtual avatars for investigative interviews with children," in *Proceedings of the 2021 Workshop on Intelligent Cross-Data Analysis and Retrieval*, 2021.

20 E. Garcia-Ceja, V. Thambawita, S. Hicks, *et al.*, "Htad: A home-tasks activities dataset with wrist-accelerometer and audio features," in *MultiMedia Modeling: 27th International Conference, MMM 2021, Prague, Czech Republic, June 22–24, 2021, Proceedings, Part II 27*, 2021.

21 H. L. Gjestang, S. Hicks, V. Thambawita, P. Halvorsen, and M. A. Riegler, "A self-learning teacher-student framework for gastrointestinal image classification," in *2021 IEEE 34th International Symposium on Computer-Based Medical Systems (CBMS)*, 2021.

22 S. Hicks, D. Jha, V. Thambawita, P. Halvorsen, H. L. Hammer, and M. A. Riegler, "The endotect 2020 challenge: Evaluation and comparison of classification, segmentation and inference time for endoscopy," in *Pattern Recognition. ICPR International Workshops and Challenges: Virtual Event, January 10-15, 2021, Proceedings, Part VIII*, 2021.

23 S. Hicks, D. Jha, V. Thambawita, *et al.*, "Medico multimedia task at mediaeval 2021: Transparency in medical image segmentation," in *Proceedings of MediaEval 2021 CEUR Workshop*, 2021.

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