Jayanth **Raghothama**

SCIENTIST · MANAGER

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Summary

Scientist, manager and tenured faculty with expertise in representation learning, deep learning, knowledge graphs and simulation. Leading healthcare projects since 2019 for early detection, prognostic risk stratification, real world evidence and care improvement. Part of large-scale initiatives on improving semantic interoperability and multi-modal data harmonization using ontologies, federated learning and knowledge graphs. Strong experience in working with real-world, multi-modal health data. Strong publication and fund raising record, with **13+** journal articles, **18+** peer-reviewed conference publications and over **14 million EUR** in grants raised through collaborative projects. Previous experience in modeling and simulation for policy analysis in Urban Planning, Transportation, Energy and Agriculture.

Experience

KTH Royal Institute of Technology   *Stockholm, Sweden*

ASSOCIATE PROFESSOR IN HEALTHCARE LOGISTICS   *Mar. 2023 - Present*

- Leading the development of novel models for early detection and risk assessment of Colo Rectal Cancer in primary care, using free text and structured data from EHRs. Models show significant improvement in clinical decisions, improved accuracy upon SOTA **(8%)**, are currently in prognostic trials in clinical sites and improve national screening guidelines.
- Leading data-driven improvement of workflows, logistics and patient flows at Karolinska University Hospital, Akademiska University Hospital Uppsala and Child Psychiatry Units in Sweden using process and sequence mining, event logs and machine learning.
- Leading the development of schema and standard agnostic multimodal data harmonization for health data, with a focus on childhood cancer, using knowledge graphs, black-box uncertainty estimation, GNNs and LLMs.
- Leading the development of models and a platform to assess climate based health risks, and support adaptation in the Baltic Region.
- Mentoring, supervision and management of research teams, comprising engineers, PhD candidates and Post-Doctoral researchers.

VICE-DIRECTOR, DIGITALIZATION PLATFORM   *Sep. 2019 - Jun. 2024*

- Co-ordinate projects and initiatives in Digitalization across the university.
- Responsible for data management and governance infrastructure for the university, resulting in the KTH Data Repository.
- Manage research calls and make funding decisions, for a budget of **3 Million SEK** per year.
- Organize inter-disciplinary workshops covering Digitalization and other domains: Life Sciences, Cyber Security, Energy, and High Performance Computing.

ASSISTANT PROFESSOR IN HEALTHCARE LOGISTICS   *Feb. 2019 - Feb. 2023*

- Lead and participate in research projects on mental health and wellbeing in children and young people, leading to instituted policies and programs in Stockholm County.
- Led federated, multi-omics modelling of data on Endometriosis, including patient reported lifestyle data to identify phenotypes, improve non-invasive detection and clinical decisions.
- Created secure, privacy compliant (GDPR) computational cloud services for data-driven research in healthcare, currently being used by over **110** research groups in the University.

POST-DOCTORAL RESEARCHER   *Sep. 2017 - Dec. 2018*

- Research on Health Accessibility and Sustainable Cities

PHD RESEARCHER   *Dec. 2012 - Aug. 2017*

- Developed ProtoWorld, a distributed, interactive simulation platform for urban planning and transportation. The platform integrates SUMO with other traffic simulations, and animates the integrated simulation at run time in Unity3D, providing a high fidelity, interactive platform for experimentation.
- ProtoWorld was used in traffic control centers for planning management strategies in the cities of Rome, Haifa, Venice, Berlin and Stockholm.

Mango Games   *Bengaluru, India*

LEAD ENGINEER   *Aug. 2012 - Dec. 2012*

- Lead for a team of engineers developing analytics for online games.

Edgemetric   *Bengaluru, India*

LEAD ENGINEER   *Jun. 2012 - Jul. 2012*

- Lead for a team of engineers developing an analytics platform for advertising companies.

Center for Study of Science, Technology and Policy (CSTEP)   *Bengaluru, India*

RESEARCH ENGINEER   *Aug. 2009 - Jan. 2012*

- Research and Development of simulations, models and games for policy analysis and design, covering agriculture, defense, urban planning and energy.
- Projects on policy design for agricultural markets, energy efficiency incentives and urban planning.
- Lead and mentor junior engineers.

Education

KTH Royal Institute of Technology *Stockholm, Sweden*

PhD, Thesis Title: Integrating Computational and Participatory Simulations for Design in Complex Systems *Dec. 2012 - Aug. 2017*

International Institute of Information Technology (IIIT-B) *Bengaluru, India*

Master of Technology in Information Technology *Aug. 2007 - Aug. 2009*

Visvesvaraya Technological University *Bengaluru, India*

Bachelor of Engineering in Computer Science and Engineering *Sep. 2003 - Jun. 2007*

Skills

Programming	Python
Machine Learning	PyTorch, Scikit-Learn
Databases	Neo4J, PostgreSQL
GIS	QGIS, PostGIS
Libraries	Spark, LlamaIndex, LangChain, Langgraph
Management	Research and Project Management, Stakeholder Management, Data Governance and Management
Leadership	Communication, Critical Thinking

Grants

2025	**3 Million SEK,** Early detection of colorectal cancer in primary care using risk assessment instruments	*Sjöbergstiftelsen*
2025	**2 Million SEK,** Mediverse: Multimodal clinical exploration and predictive search on a single graph	*Digital Futures*
2024	**468 kSEK,** Integrating AI in Healthcare Education	*WASP*
2024	**7 Million EUR,** Demonstrating transformative solutions to empower climate resilience towards improved public health status in the EU boreal region (AURORA)	*EU Horizon Europe*
2024	**1 Million SEK,** AI Based Detection of Colo Rectal Cancer in Primary Care	*Digital Futures*
2023	**2 Million SEK,** Data Driven Improvement of Workflows at Karolinska University Hospital	*Digital Futures*
2022	**700k SEK,** Ontology tool as basis for a national metadata catalogue	*Vinnova*
2021	**6 Million EUR,** FEMaLe, Finding Endometriosis using Machine Learning	*EU Horizon 2020*
2021	**550k SEK,** Gamification for Waterbusses	*Lighthouse*
2019	**1 Million SEK,** Health Accessibility in a Smart City	*TRENoP*

Select Publications

- Hellstrand, M., Raghothama, J., & Meijer, S. (2025). FAIR for whom? A reality check on the state of FAIR research data management in a collaborative research project. Big Data & Society, 12(2), 20539517251349157.
- Boodaghian Asl, A., Raghothama, J., Darwich, A. S., & Meijer, S. (2025). A dynamic nonlinear flow algorithm to model patient flow. Scientific Reports, 15(1), 12052.
- Balogh, D. B., Hudelist, G., Bļizņuks, D., Raghothama, J., Becker, C. M., Horace, R., Krentel, H., Horne, A. W., Bourdel, N., Marki, G., Tomassetti, C., Kirk, U. B., Acs, N., & Bokor, A. (2024). FEMaLe: The use of machine learning for early diagnosis of endometriosis based on patient self-reported data—Study protocol of a multicenter trial. PLOS ONE, 19(5), e0300186.
- Hellstrand, M., Kornevs, M., Raghothama, J., & Meijer, S. (2024). Tensions between real-world practices and the digitalization paradigm for data-driven services in eldercare: Observations from an ethnographic study in Sweden. BMC Geriatrics, 24(1), 98.
- Marzano, L., Darwich, A. S., Dan, A., Tendler, S., Lewensohn, R., De Petris, L., Raghothama, J., & Meijer, S. (2024). Exploring the discrepancies between clinical trials and real-world data: A small-cell lung cancer study. Clinical and Translational Science, 17(8), e13909.
- Marzano, L., Darwich, A. S., Jayanth, R., Sven, L., Falk, N., Bodeby, P., & Meijer, S. (2024). Diagnosing an overcrowded emergency department from its Electronic Health Records. Scientific Reports, 14(1), 9955.
- Marzano, L., Darwich, A. S., Tendler, S., Dan, A., Lewensohn, R., De Petris, L., Raghothama, J., & Meijer, S. (2022). A novel analytical framework for risk stratification of real-world data using machine learning: A small cell lung cancer study. Clinical and Translational Science, 15(10), 2437–2447.
- Raghothama, J., Hauge, J. B., & Meijer, S. (2022). Curating Player Experience Through Simulations in City Games. Urban Planning, 7(2), Article 2.

Leadership

- Course on leadership for Associate Professors, internal program for select faculty at KTH Royal Institute of Technology.
- Partners in Learning, Course on leadership for Assistant Professors, KTH Royal Institute of Technology.
- Reviewing Nature Scientific Reports, Journal of Biomedical Informatics, Journal of Simulation & Gaming; SAGE Journal of Simulation; Editorial Review Board, International Journal of Gaming and Computer-Mediated Simulations (IJGCMS); Editorial Review Board, International Journal of Game-Based Learning (IJGBL); British Journal of Education Technology (BJET)
- Chair, Gaming Track, ACM/IEEE SIG Winter Simulation Conference, 2018-2022; Chair, Logistics Track, International Simulation and Gaming Association Conference; Chair, Health Systems Design Summer School, organized as part of the Health Systems Design SIG of the Design Society