

Oulu, Finland

WebDev: [komasurfer.com/portfolio](https://komasurfer.com/portfolio)Research: [jonaso.de/projects](https://jonaso.de/projects)GitHub: [github.com/joetm](https://github.com/joetm)

## Development Journey

- 2002–2011: Industrial engineering and management
- 2011–2012: Idea management with web-based systems
- 2013–2014: IT service management and IT service design
- 2014–2018: Knowledge sharing with semantic web technologies and ontology engineering
- 2018–2021: Creativity support tools and design feedback with crowdsourcing
- 2021–today: Pioneering applications of generative AI and prompt engineering

## Skills Summary

### RESEARCH:

- **Data analysis:** Quantitative analysis (Python/R/Excel) and qualitative methods (thematic analysis)
- **User experience research:** Planned, designed, and executed user studies (laboratory experiments, interview studies) and randomized controlled trials
- **Idea implementation:** Designed, developed, and evaluated web-based and cross-device applications

### MANAGEMENT:

- **Supervision:** Supervised and mentored research assistants and students (Bachelor/Master)
- **Recruitment:** Interviewed new team members (Postdocs, PhDs, research assistants)

### COMMUNICATION:

- **Collaboration:** Collaborated with colleagues and external research partners to achieve new breakthroughs in research and innovation
- **Relationship building:** Established collaborations with leading universities and professors
- **Public speaking:** Presented at international conferences
- **Teaching:** Teaching HCI to classes of  $\approx 150$  students

### ORGANIZATIONAL:

- **Time management:** Self-dependently planned and conducted research projects under multiple deadlines
- **Event planning:** Organised events and workshops (CHI workshops, summer school, scientific conference)

## Technical Skills

### TECHNOLOGIES THAT I CURRENTLY WORK WITH:

**Languages:** Python, JavaScript, TypeScript,  $\LaTeX$ .

**Prompting:** ChatGPT/GPT-4, prompt engineering (chain-of-thought, few-shot), retrieval-augmentation (RAG), LangChain, AutoGen, Semantic Kernel, Azure, OpenAI API, Terraform, ...

**AI/ML & Data Science:** Pandas, NumPy, PyTorch, Jupyter, Huggingface, nltk, BERTopic, Matplotlib, Seaborn, Vega-Altair, BeautifulSoup, Selenium ...

**WebDev:** React, Tailwind, zustand, Stripe, Ionic Capacitor, HTML/CSS, Git, yarn/npm, bash scripting, ...

**Cloud:** AWS (Lambda, S3, EC2, API Gateway), Google Cloud, Docker, Firebase, Terraform, AWS cli, gcloud CLI, RunPod, Replicate.com, ...

### SELECTED TECHNOLOGIES USED IN PAST PROJECTS:

**AI/ML:** AutoGen, AG2, scikit-learn, Huggingface, networkx, WandB, Google Colab, R. **Web dev:** Azure, Streamlit, Chainlit, Svelte/sveltekit, T3/NEXT.js, Vue.js, Redux, Node.js/Express, Gatsby, CKAN, D3, PHP, Zend Framework, OpenAPI/Swagger, vBulletin, Wordpress, Elasticsearch, Django, Flask, jQuery, Backbone.js, Apache, Less/Sass. **Mobile:** Apache Cordova, Monaca. **Databases:** MySQL, GraphQL, PostgreSQL, MongoDB, Elasticsearch, Redis, SQLite. **Virtualisation:** Docker, Vagrant, Ansible, cog, Apptainer. **Crowdsourcing:** MTurk, Prolific. **Office:** Microsoft Excel, VBA. **Semantic Web:** RDF, OWL, SPARQL, Protégé. **Misc:** Jira, Confluence, Webpack, Fabric, Selenium, Puppeteer, svm, GitHub Actions, Jest, Karma/Jasmine.

## Education

Oct 2021	<b>Doctor of Science (Tech.),</b> Computer Science (distinction)	<i>University of Oulu, Finland</i>
Nov 2015	<b>Master of Science,</b> Computer Science (distinction)	<i>University of Southampton, United Kingdom</i>
Aug 2013	<b>Certificate in Business Analysis</b>	<i>School of Continuing Studies, University of Toronto, Canada</i>
Mar 2011	<b>Diplom-Wirtschaftsingenieur,</b> Industrial Engineering	<i>TU Darmstadt, Germany</i>

## Professional Experience

Sep 2024 – today	<b>Postdoctoral Researcher</b>	<i>University of Oulu, Finland</i>
<ul style="list-style-type: none"> <li>– Prompt engineering and text-to-image generation</li> <li>– Meta-research in HCI (Meta-HCI)</li> </ul>		
Nov 2023 – Feb 2024	<b>Senior Research Scientist</b>	<i>Elisa Corporation, Helsinki, Finland</i>
Feb 2022 – Nov 2023	<b>Postdoctoral Researcher</b>	<i>University of Jyväskylä, Finland</i>
Prompt engineering and text-to-image generation		
Apr 2021 – Aug 2021	<b>Senior Researcher/PostDoc</b>	<i>Karlsruhe Institute of Technology/FIZ Karlsruhe, Germany</i>

Ontology engineer in NFDI initiative: Design, implement, and manage the NFDI4Culture knowledge graph

- May 2018 – Apr 2021 **Doctoral Researcher** *Center for Ubiquitous Computing, University of Oulu, Finland*
- Investigated creative work on non-creative crowdsourcing platforms with a value-sensitive approach
  - Designed, implemented, and evaluated crowd feedback systems and creativity support tools
  - Teaching Human-Computer Interaction ( $\approx 150$  students) and Social Computing (20 – 65 students)
- Aug 2016 – Apr 2018 **Researcher** *Human-Centered Computing, Freie Universität Berlin, Germany*
- Designed and developed socio-technical systems and crowdsourcing work flows for facilitating knowledge transfer
  - Supervision of bachelor and master students
- Aug 2016 – Mar 2017 **Researcher** *Cluster of Excellence “Image Knowledge Gestaltung”, Berlin, Germany*
- May 2016 – July 2016 **Web Developer (Full-Stack)** *Liip AG, Bern, Switzerland*
- Full-stack development of web applications in an agile Scrum team
- Oct 2015 – Apr 2016 **Developer (Full-Stack)** *Seme4 Ltd., Southampton, United Kingdom*
- Developed [SkillsPlanner.net](#) linked data platform and CKAN tool suite advancing fair and open data
- Aug 2013 – July 2014 **Business Analyst** *Alstom IS&T, Paris, France*
- Maintained IT service catalogue, designed user-facing IT services, conducted price analysis
- June 2011 – Mar 2012 **Strategy Analyst Trainee** *Alstom Power, Baden, Switzerland*
- Ad-hoc support for strategic management
- Aug 2008 – Jan 2013 **Full-Stack Web Developer (Freelance)** *Darmstadt, Germany*
- Conceived, built, and maintained several web applications, including an online community with over 228,000 members

## Awards

Nokia Foundation Scholarship (2020 and 2019), Wihuri Foundation Grant (2020), Takasen Foundation Scholarship (2020), Finnish Foundation for Technology Grant (2020), Tauno Tönning Foundation Grant (2020), University of Oulu UniOGS grants (2019 and 2020), ACM SIGCHI travel grant (2019), Erasmus Sokrates Scholarship (2005)

## Certifications and Licenses

Microsoft Certified: Azure AI Engineer Associate (2024), Certified SAFe 6 Agilist (2023), Design Thinking (2021), Scrum Product Owner (2020), Scrum Master (2014), ITIL v3 Foundation (2014), PMI-certified Associate in Project Management (2014), Certificate in Business Analysis (2013), QM-Beauftragter (DAkKS) (2013), SAP TERP10 Certified (2013), Zend Certified Engineer PHP 5 (2010), Business English Certificate Higher (2009)

## Trainings and Courses

LUMI intro course (2024), Leading SAFe 6.0 (2023), Generative Modeling Summer School (2023), Containers in Supercomputing Environment (2023), CSC Computing Environment (2022), Design Thinking (2021), Elements of AI (2020), ITIL 2011: Service Design, Service Operation, Service Strategy, Service Transition, Operational Support & Analysis (2015)

## Languages

English (working language; TOEFL 114/120, IELTS 8)      German (Mother tongue)      French (4 years, uncertified)

## Publications

53 publications, including 12 journal articles and 13 conference papers, with 50+ co-authors

[Google Scholar profile](#)

## Academic Service

Grant reviewer: Luxembourg National Research Fund FNR (2025), French National Research Agency ANR (2025), Swiss National Science Foundation SNSF (2024), Associate Chair (CHI '19), Program Committee Member (CI '25, WWW '23, HCOMP '22 and '21), Conference Chair (Academic Mindtrek '23), Organizing Committee Member (CrowdCamp@HCOMP '23, ICDC 2020, UBISS '18), Conference Reviewer (e.g., CHI '18 – '24), Journal Reviewer (Behaviour & Information Technology, Human Computation)

## Selected Research Projects



*Meta-HCI* (since 2024)

This project investigates how Human–Computer Interaction (HCI) as a field produces, organizes, and validates knowledge by analyzing patterns in publications, collaboration networks, and citation dynamics. Using bibliometric and scientometric methods, the project identifies influential research trajectories, methodological trends, and structural imbalances, providing an empirical perspective on how the discipline evolves and how its research practices shape future inquiry.



### Prompt engineering (since 2021)

This project investigates the practice of 'prompt engineering' in the context of text-to-image generation and AI-generated art.



### Crowdsourcing creative work (2018 – 2021)

This doctoral research project investigated how creative work is experienced by workers on non-creative crowdsourcing platforms, including the development of several crowd feedback systems.



### IKON – Knowledge transfer in research museums (2016 – 2018)

An information architecture and visualisation on a public display for facilitating knowledge transfer among the researchers at the Museum for Natural History in Berlin.

## Selected software and web projects



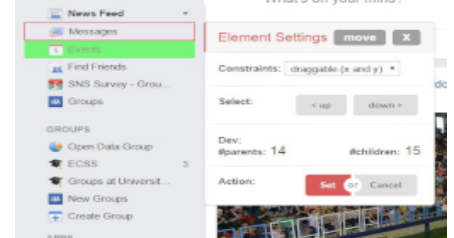
### Artworks Reimagined – Researchers' Night (2023)

A generative system demonstrated at the European Researchers' Night, enabling visitors to 'reimagine' an artwork by posing in front of a public touchscreen display. StableDiffusion, T2IAdapter, ControlNet, Openpose, Real-ESRGAN, CLIP-Interrogator. [slides](#)



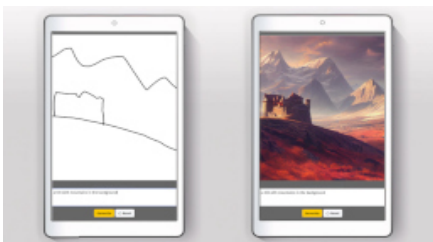
### DUPLEX situated feedback system (2019)

A concept for a public display installation that allows artists to collect feedback from a situated crowd. One digital artwork is shown on the main screen while feedback is entered on a touchscreen. [github.com/joetm/perdis-client](https://github.com/joetm/perdis-client)



### CrowdUI crowd feedback system to support web design (2020)

CrowdUI is a system for co-designing webpage with the website users. Website visitors can manipulate the elements of the webpage and peer-evaluating the user-created layouts. [www.crowdui.com](http://www.crowdui.com)



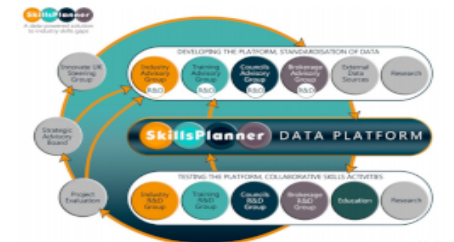
### SketchDraw (2023)

A hybrid (mobile/web) app turning sketches into artworks using ControlNet and Stable Diffusion



### OwlNightLong (2023)

A lightweight web application for translating Finnish to English using a large language model (LLM) [ownightlong.online](https://ownightlong.online)



### SkillsPlanner Linked Data Platform (2015 – 2016)

Developed Skillsplanner linked data platform, including data conversion tools and documentation. [www.skillsplanner.net](http://www.skillsplanner.net)



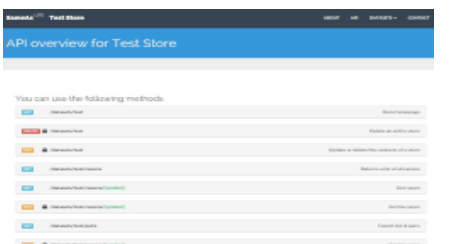
### SBB Pilot Open Data Platform Public Transport Switzerland (2016)

An open data store for transport in Switzerland. Work included developing extensions for CKAN. [opentransportdata.swiss](https://opentransportdata.swiss)



### Eurapco Trend Monitoring Platform (2016)

Developed a web platform for monitoring trends (Python/Django, Vue.js) [www.eurapco-trends.com](http://www.eurapco-trends.com)



### sameAs-Lite (2016)

A co-reference resolution service offered as open source and implemented with object-oriented PHP. [github.com/sem4/sameAs-Lite](https://github.com/sem4/sameAs-Lite)