

# Minttu Alakuijala

<firstname>.<lastname>@gmail.com ♦ Helsinki, Finland ♦ Nationality: Finland

 [linkedin.com/in/minttualakuijala](https://www.linkedin.com/in/minttualakuijala)  [minttualakuijala.com](https://minttualakuijala.com)  [github.com/minttusofia](https://github.com/minttusofia)

## EDUCATION

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- **Ecole Normale Supérieure (ENS), Google, Inria** Grenoble / Paris, France  
• **PhD in Computer Science** *Feb 2019 – Dec 2022*  
One of only 6 students to conduct a PhD at Google Research (CIFRE programme)  
– Shared time between Google and Inria
  - **Thesis:** Self-taught robots: Autonomous and weakly-supervised learning for robotic manipulation
  - **Research topics:** Robot learning from human videos, Residual reinforcement learning, Learning from demonstration for robotic manipulation
  - **Advised by:** Jean Ponce (ENS), Cordelia Schmid (Google), Julien Mairal (Inria)
- **University College London (UCL)** London, UK  
• **Master of Engineering (MEng) in Computer Science** *Sep 2014 – Jun 2018*  
Cumulative average: 81 – First-class honours – Dean's List
  - **Master's project:** Reinforcement Learning for Query Reformulation and multi-step Question Answering with Prof. Sebastian Riedel
  - **Reinforcement learning research project:** Applied policy-based methods and Deep Q-networks on the OpenAI Gym website interaction benchmark Mini World of Bits with Prof. Jun Wang
  - **Relevant courses:** Advanced Deep Learning and Reinforcement Learning – Supervised Learning – Graphical Models – Statistical Natural Language Processing – Machine Vision

## PROFESSIONAL EXPERIENCE

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- **Postdoctoral Researcher** at Aalto University Helsinki, Finland  
*May 2023 – present*
  - Training LLM agents for multi-step tool use: industry collaboration with System 2 AI
  - Vision-language inverse reinforcement learning for robotic manipulation
  - Building world models for model-based reinforcement learning in code and other symbolic formats using LLMs
  - Autonomous task decomposition with LLMs
  - Teaching Assistant for Machine Learning (CS-C3240) (won Faculty Teaching Award 2023), and Seminar on NLP Research (CS-E407517)
- **Predoctoral Researcher** at Inria Grenoble, France  
Learning from demonstration for robotic grasping *Nov 2018 – Jan 2019*
- **Software Engineering Intern** at Google Zürich, Switzerland  
Applied machine learning to non-exclusively owned content detection on YouTube *Jun 2018 – Aug 2018*
- **Research Intern** at Google, *Machine Perception* Zürich, Switzerland  
*Jun 2017 – Sep 2017*
  - **Computer vision:** Incorporated textual data to improve image classification
  - **Natural language processing:** Investigated different choices of word and sentence-level embedding methods
  - **TensorFlow, GPU programming:** Implemented and trained classification models on the MS COCO dataset
- **Software Engineering Intern** at Google London, UK  
*Jun 2016 – Sep 2016*
  - Produced insights into the accuracy of Google Play Store Listing Experiments results
  - Independently defined the scope, design and deliverables of an open-ended engineering problem

## PUBLICATIONS

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- **Minttu Alakuijala\***, Ya Gao\*, Georgy Ananov, Samuel Kaski, Pekka Marttinen, Alexander Ilin, Harri Valpola  
*Memento No More: Coaching AI Agents to Master Multiple Tasks via Hints Internalization*  
In review, 2025
- **Minttu Alakuijala**, Reginald McLean, Isaac Woungang, Nariman Farsad, Samuel Kaski, Pekka Marttinen, Kai Yuan  
*Video-Language Critic: Transferable Reward Functions for Language-Conditioned Robotics*  
TMLR, 2025
- Nicola Dainese, Matteo Merler, **Minttu Alakuijala**, Pekka Marttinen  
*Generating Code World Models with Large Language Models Guided by Monte Carlo Tree Search*  
NeurIPS 2024
- Sergio Hernández-Gutiérrez, **Minttu Alakuijala**, Alexander Nikitin, Pekka Marttinen  
*Recursive Decomposition with Dependencies for Generic Divide-and-Conquer Reasoning*  
NeurIPS 2024 Workshop on System 2 Reasoning At Scale
- **Minttu Alakuijala**, Gabriel Dulac-Arnold, Julien Mairal, Jean Ponce, Cordelia Schmid  
*Learning Reward Functions for Robotic Manipulation by Observing Humans*  
ICRA 2023
- **Minttu Alakuijala**, Gabriel Dulac-Arnold, Julien Mairal, Jean Ponce, Cordelia Schmid  
*Residual Reinforcement Learning from Demonstrations*  
RSS 2020 Workshop on Advances & Challenges in Imitation Learning for Robotics
- **Minttu Alakuijala**, Julien Mairal, Jean Ponce, Cordelia Schmid  
*Discovering Actions by Jointly Clustering Video and Narration Streams Across Tasks*  
CVPR 2020 Workshop on Learning from Instructional Videos

## LEADERSHIP & EXTRACURRICULAR EXPERIENCE

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|---|-----------------------------|--------------|
| • <b>Aalto LLM community, Co-organiser of weekly seminars</b>       | <i>Nov 2023 – present</i>   | Helsinki, FI |
| • <b>FCAI RL &amp; Language team, Coordinating postdoc</b>          | <i>May 2023 – present</i>   | Helsinki, FI |
| • <b>Inria Reinforcement Learning reading group, Main Organiser</b> | <i>Jun 2020 – Feb 2021,</i> | Grenoble, FR |
| • <b>MEng Computer Science Academic Representative</b>              | <i>Oct 2017 – Jun 2018,</i> | London, UK   |
| • <b>UCL Technology Society Representative</b>                      | <i>Oct 2015 – Apr 2016,</i> | London, UK   |
| • <b>Coding Tutor</b> for Code Club UK                              | <i>Jan 2015 – Mar 2016,</i> | London, UK   |
| • <b>Treasurer</b> of UCL Vegetarian and Vegan Society              | <i>Aug 2017 – Jul 2018,</i> | London, UK   |
| • <b>Undergraduate Mentor at University College London</b>          | <i>Sep 2015 – Dec 2015,</i> | London, UK   |

## TECHNICAL SKILLS

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<i>Working knowledge</i>	<b>Python, PyTorch, TensorFlow, JAX</b> , ROS, Matlab, $\text{\LaTeX}$ , Git, Google Cloud, AWS, SQL
<i>Basic knowledge</i>	Java, C/C++, HTML/CSS, Javascript, jQuery, ReactJS, Less.js, Node.js, Bash, Spark

## LANGUAGES

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<i>Native or near-native</i>	Finnish, English
<i>Working proficiency</i>	German, French