SANNARA EK

Graduating PhD Candidate on Personalized Federated Learning

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in linkedin.com/in/ek-sannara 🎓 https://scholar.google.com/citations?user=P1F8sQgAAAAJ&hl=en

EXPERIENCES

Research Intern

Laboratoire d'Informatique de Grenoble - GETALP

📅 Feb 2020 – Jul 2020   📍 Grenoble, France

- Researched federated learning for sensor-based Human Activity Recognition in heterogeneous environments, enhancing model adaptability for distributed systems.
- Developed and applied state-of-the-art methods in federated learning, aimed at optimizing personalized activity recognition.

Research Intern

Laboratoire d'Informatique de Grenoble - GETALP

📅 Jan 2019 – Jun 2019   📍 Grenoble, France

- Designed cognitive measurement techniques using eye trackers for precise cognitive load analysis in user studies.
- Enhanced cognitive assessment methodologies via eye movement data analysis.

Software Engineer

Udaya Technology Co., Ltd

📅 Sep 2017 – Apr 2018   📍 Phnom Penh, Cambodia

- Developed management-support mobile applications in Java and Swift, implementing RESTful services to improve operational efficiency.

Network Engineer Intern

Huawei Technology Co., Ltd

📅 May 2017 – Jul 2017   📍 Phnom Penh, Cambodia

- Configured and optimized core routers and switches for network migration, ensuring minimal downtime.

LANGUAGES

English [IELTS 8.0], Khmer Fluent
Japanese [B1], French [B1] Basic

EDUCATION

Doctor of Philosophy in Computer Science | Federated Learning Within Pervasive Heterogeneous Environments

Université Grenoble Alpes - LIG

📅 October 2021 – September 2024 (Expected)

Winter Natural Language Processing School

Advanced Language Processing Winter School (ALPS) 2023

📅 January 2023

Master of Science in Informatics at Grenoble | Graphics, Vision and Robotics

Université Grenoble Alpes - Grenoble INP

📅 September 2018 – September 2020

Cisco Certified Network Associate Training Course

Sunrise Institute of Technology

📅 May 2015 – June 2016

Bachelor of Science (Hons) in Software Engineering with Multimedia

Limkokwing University of Creative Technology

📅 June 2013 – May 2017

HONORS & AWARDS

- Tan Sri Dato's Sri Paduka Limkokwing Award for Creativity and Innovation
- Valedictorian of Limkokwing University of Creative Technology Graduation Ceremony for the years 2015-2017

TECHNICAL SKILLS

Java (Android), Python (Tensorflow) Expert
Swift, React, NodeJs, SQL Advanced
Network & OS Essentials Knowledgeable

EXPERTISE DOMAINS

Federated learning   Self-supervised learning

Mobile and Pervasive computing

Computer vision   Human activity recognition

ACTIVITIES

Visiting Research Assistant
The Hong Kong Polytechnic University - IMCL Lab
📅 06 Aug 2024 – 13 Sep 2024   📍 Hong Kong, China

Visiting Student Researcher
University of Milan - EveryWare Lab
📅 10 Oct 2022 – 13 Nov 2022   📍 Milan, Italy

Visiting Student Researcher
Université de Lorraine - Institut Jean Lamour
📅 05 Dec 2021 – 09 Dec 2021   📍 Nancy, France

REFERENCES

👤 Prof. Philippe Lalanda [Phd Supervisor]
Professor @ Université Grenoble Alpes
philippe.lalanda@univ-grenoble-alpes.fr

👤 Prof. François Portet [Phd Supervisor]
Professor @ Université Grenoble Alpes
francois.portet@univ-grenoble-alpes.fr

👤 Prof. Claudio Bettini [Research Exchange Host]
Professor @ University of Milan
claudio.bettini@unimi.it

👤 Prof. Jiannong Cao [Research Exchange Host]
Chair Professor @ The Hong Kong Polytechnic University
jiannong.cao@polyu.edu.hk

PUBLICATIONS

- **Ek, Sannara**, Riccardo Presotto, Gabriele Civitarese, François Portet, Philippe Lalanda, and Claudio Bettini (2024). "Comparing Self-Supervised Learning Techniques for Wearable Human Activity Recognition". In: *arXiv preprint*.

- **Ek, Sannara**, François Portet, and Philippe Lalanda (2023). "Transformer-based models to deal with heterogeneous environments in Human Activity Recognition". In: *Personal and Ubiquitous Computing*, pp. 1–14.

- **Ek, Sannara**, Riccardo Presotto, Gabriele Civitarese, François Portet, Philippe Lalanda, and Claudio Bettini (2023). "Comparing Self-Supervised Learning Techniques for Wearable Human Activity Recognition". In: *Available at SSRN 4529608*.

- Presotto, Riccardo, **Sannara, Ek**, Gabriele Civitarese, François Portet, Philippe Lalanda, and Claudio Bettini (2023). "Combining Public Human Activity Recognition Datasets to Mitigate Labeled Data Scarcity". In: *2023 IEEE International Conference on Smart Computing (SMARTCOMP)*, pp. 33–40.

- **Ek, Sannara**, Philippe Lalanda, and François Portet (2022). "Federated Learning Within Pervasive Heterogeneous Environments". In: *2022 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops)*. IEEE, pp. 134–135.

- **Ek, Sannara**, François Portet, Philippe Lalanda, and German Vega (2022). "Evaluation and comparison of federated learning algorithms for Human Activity Recognition on smartphones". In: *Pervasive and Mobile Computing* 87.

- **Ek, Sannara**, Romain Rombourg, François Portet, and Philippe Lalanda (2022). "Federated Self-Supervised Learning in Heterogeneous Settings: Limits of a Baseline Approach on HAR". in: *2022 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops)*. IEEE, pp. 557–562.

- **Ek, Sannara**, François Portet, Philippe Lalanda, and German Eduardo Vega Baez (2021). "Evaluating Federated Learning for human activity recognition". In: *Workshop AI for Internet of Things, in conjunction with IJCAI-PRICAI 2020*.

- **Ek, Sannara**, François Portet, Philippe Lalanda, and German Vega (2021). "A federated learning aggregation algorithm for pervasive computing: Evaluation and comparison". In: *2021 IEEE International Conference on Pervasive Computing and Communications (PerCom)*. IEEE, pp. 1–10.

- **Ek**, **Sannara**, François Portet, Philippe Lalanda, and German Vega (2020). "Evaluation of federated learning aggregation algorithms: application to human activity recognition". In: *Adjunct Proceedings of the 2020 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2020 ACM International Symposium on Wearable Computers*, pp. 638–643.

- Schwab, Didier, Sébastien Riou, Amela Fejza, Loic Vial, Johana Marku, Wafaa Husseini, **Sannara, Ek**, Miles Bardon, and Yann Robert (2020). *Le projet GazePlay: des jeux ouverts, gratuits et une communauté pour les personnes en situation de polyhandicap.*