

# Dr. Kristina P. Sinaga | Independent Researcher

– Indonesia

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## Professional Summary

Ph.D. in Applied Mathematics with **7+ years** of experience in **machine learning**, **federated learning**, and **multi-view clustering**. Expert in privacy-preserving AI with **2,800+ citations**, h-index of **7**, and publications in top-tier journals (IEEE TPAMI, IEEE Access). Proven track record of developing innovative algorithms, leading research projects, and contributing to open-source software.

## Education

**Chung Yuan Christian University**

**Taiwan**

**Ph.D. in Applied Mathematics**

2016–2020

*Dissertation:* Multi-view Fuzzy Clustering Algorithms for Multi-View Data

**6 journal publications** during studies, **2,800+ citations**

**University of Sumatera Utara**

**Indonesia**

**M.Sc. in Mathematics**

2013–2015

*Thesis:* Stochastic Optimization Models for Emergency Service Location Problems

**University of Sumatera Utara**

**Indonesia**

**B.Sc. in Mathematics**

2008–2013

Graduated with high honors

## Professional Experience

**ISTI-CNR**

**Italy**

**Postdoctoral Researcher**

Oct 2024–September 2025

- Developing novel clustering algorithms achieving **20-30% improvement** in accuracy
- Authoring **3+ papers** in federated unsupervised machine learning (in progress)
- Peer reviewer for **IEEE Access**, multiple **MDPI** and **Elsevier** journals

**Chung Yuan Christian University**

**Taiwan**

**Postdoctoral Fellow**

Mar 2023–Mar 2024

- Developed breakthrough clustering algorithms published in **IEEE TPAMI** (IF: **24.3**)
- Created **federated** and **non-federated** multi-view clustering frameworks
- Advanced theoretical foundations of **privacy-preserving machine learning**

**Bina Nusantara University**

**Indonesia**

**Assistant Professor** (Lecturer Specialist S3)

Nov 2020–Mar 2022

- Taught Mathematics and Data Analysis to **200+ students**
- Achieved **35% increase** in student engagement and **90%+ completion** rates
- Supervised **10+ student** research projects

## Key Publications & Impact

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**Metrics:** 2,950+ Citations | h-index: 7 | 15+ Journal Articles | IEEE, Elsevier, MDPI

**Recent:** Federated Multi-View K-Means Clustering, *IEEE TPAMI*, 2025 (IF: 24.3)

**Popular:** Unsupervised k-means clustering algorithm, *IEEE Access*, 2020 (2,450+ citations)

**Notable:** Feature-reduction multi-view k-means clustering, *IEEE Access*, 2019 (140+ citations)

## Technical Skills

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**Programming:** Python, R, MATLAB, and LaTeX

**ML/AI Frameworks:** TensorFlow, PyTorch, scikit-learn, Keras, NumPy, Pandas

**Specializations:** Federated Learning, Multi-View Clustering, Privacy-Preserving ML, Statistical Modeling

## Open Source Contributions

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**PyPI Packages:** mvkm-ed 1.1.0: Multi-View Clustering Framework with federated learning capabilities

gcomvkm 0.1.0: Collaborative Multi-View Clustering with entropy regularization

## Awards & Recognition

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**MDPI Publishers**

*Mathematics Exceptional Reviewers List*

2025

**Phi Tau Phi Scholastic Honor Society**

Taiwan

*Honorary Member*

2020

**Japan Science and Technology Agency**

Japan

*JST Scholarship*

2018

**Chung Yuan Christian University**

Taiwan

*International Student Scholarship*

2016

## Certifications

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**Stanford University & DeepLearning.AI**

Coursera

*Machine Learning Specialization*

2022

**DeepLearning.AI**

Coursera

*TensorFlow Developer Specialization*

2022