

Tutorial on Memory-Centric Computing: Logistics

Geraldo F. Oliveira

<https://geraldofojunior.github.io>

PPoPP 2025

1st March 2025

Brief Self Introduction



■ Geraldo F. Oliveira

- Researcher @ SAFARI Research Group since November 2017
- Very soon, I will defend my PhD thesis, advised by Onur Mutlu
- **I am in the job market for industry positions**
- <https://geraldofojunior.github.io/>
- geraldofojunior@gmail.com (Best way to reach me)
- <https://safari.ethz.ch>

■ Research in:

- Computer architecture, computer systems, hardware security
- Memory and storage systems
- Hardware security, safety, predictability
- Fault tolerance
- Hardware/software cooperation
- ...


Get the Materials Online



<https://events.safari.ethz.ch/ppopp25-memorycentric-tutorial/doku.php?id=start>

Edit

Tutorial Materials

Time	Speaker	Title	Materials
08:00am-08:30am	Prof. Onur Mutlu / Geraldo F. Oliveira	Memory-Centric Computing	(PDF) (PPT)
08:30am-09:30am	Geraldo F. Oliveira	Processing-Near-Memory Systems: Developments from Academia & Industry	(PDF) (PPT)
09:30am-10:00am	Geraldo F. Oliveira	Programming Processing-Near-Memory Systems	(PDF) (PPT)
10:00am-10:30am	N/A	Coffee Break	
10:30am-11:00am	Geraldo F. Oliveira	Processing-Using-Memory Systems for Bulk Bitwise Operations	(PDF) (PPT)
11:00am-11:30am	Ataberk Olgun	Infrastructure for Processing-Using-Memory Research	(PDF) (PPT)
11:30am-12:00pm	 Prof. John Kim	Is it Memory-Centric or Communication-Centric?	(PDF) (PPT)

Get the Materials Online

<https://events.safari.ethz.ch/ppopp25-memorycentric-tutorial/>

Tutorial Materials

Time	Speaker
08:00am-08:30am	Prof. Olive
08:30am-09:30am	Geral
09:30am-10:00am	Geral
10:00am-10:30am	N/A
10:30am-11:00am	Geral
11:00am-11:30am	Atabe
11:30am-12:00pm	Pr



[ku.php?id=start](https://events.safari.ethz.ch/ppopp25-memorycentric-tutorial/doku.php?id=start)

Edit

Materials
(PDF) (PPT)
& (PDF) (PPT)
(PDF) (PPT)
(PDF) (PPT)
(PDF) (PPT)
(PDF) (PPT)

<https://events.safari.ethz.ch/ppopp25-memorycentric-tutorial/doku.php?id=start>

Organizers

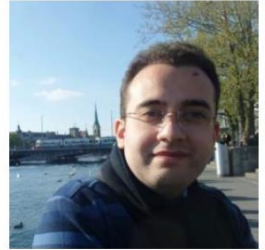
■ **Geraldo F. Oliveira**

- Researcher @ SAFARI Research Group since November 2017
- I am in the job market for industry positions
- <https://geraldofjunior.github.io/>



■ **Dr. Mohammad Sadrosadati**

- Senior Researcher and Lecturer, SAFARI @ ETH Zürich
- <https://scholar.google.com/citations?user=-mHpDvAAAAAJ>



■ **Ataberk Olgun**

- PhD Candidate, SAFARI Research Group @ ETH Zürich
- <https://ataberkolgun.com/>



■ **Prof. Onur Mutlu**

- Professor of Computer Science at ETH Zurich
- <https://people.inf.ethz.ch/omutlu/index.html>



Agenda

- **Prof. Onur Mutlu:**
Memory-Centric Computing
- Processing-Near-Memory Systems: Developments from Academia & Industry
- Programming Processing-Near-Memory Systems
- Coffee Break
- Processing-Using-Memory Systems for Bulk Bitwise Operations
- **Ataberk Olgun:**
Infrastructure for Processing-Using-Memory Research
- **Invited Talk by Prof. John Kim:**
Is it Memory-Centric or Communication-Centric?

Next PIM Tutorials/Workshops (I)

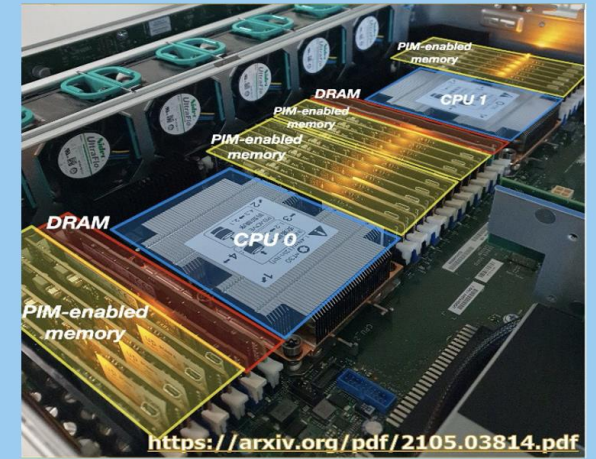
ASPLOS 2025 - 1st Workshop on Memory-Centric Computing Systems

Sunday, March 30th, Rotterdam, The Netherlands

Organizers: Geraldo F. Oliveira, Dr. Mohammad Sadrosadati, Ataberk Olgun, Professor Onur Mutlu

Program: <https://events.safari.ethz.ch/asplos25-MCCSys/doku.php>

Overview of PIM | PIM taxonomy
PIM in memory & storage
Real-world PNM systems
PUM for bulk bitwise operations
Programming techniques & tools
Infrastructures for PIM Research
Research challenges & opportunities



<https://events.safari.ethz.ch/asplos25-MCCSys/doku.php>

Next PIM Tutorials/Workshops (II)

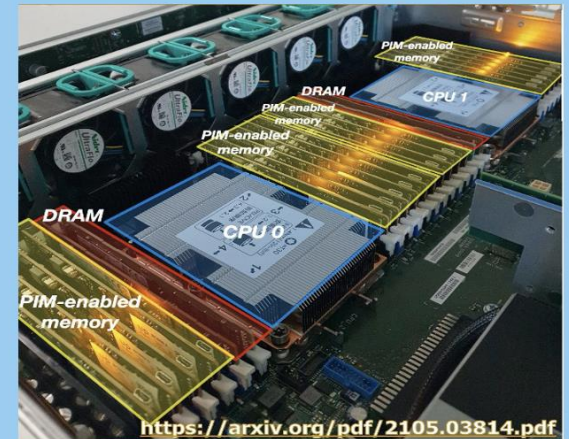
ICS 2025 - 2nd Workshop on Memory-Centric Computing Systems

Sunday, June 8th, Salt Lake City, USA

Organizers: Geraldo F. Oliveira, Dr. Mohammad Sadrosadati,
Ataberk Olgun, Professor Onur Mutlu

Program: <https://events.safari.ethz.ch/ics25-MCCSys/doku.php>

Overview of PIM | PIM taxonomy
PIM in memory & storage
Real-world PNM systems
PUM for bulk bitwise operations
Programming techniques & tools
Infrastructures for PIM Research
Research challenges & opportunities



<https://events.safari.ethz.ch/ics25-MCCSys/doku.php>

Next PIM Tutorials/Workshops (III)

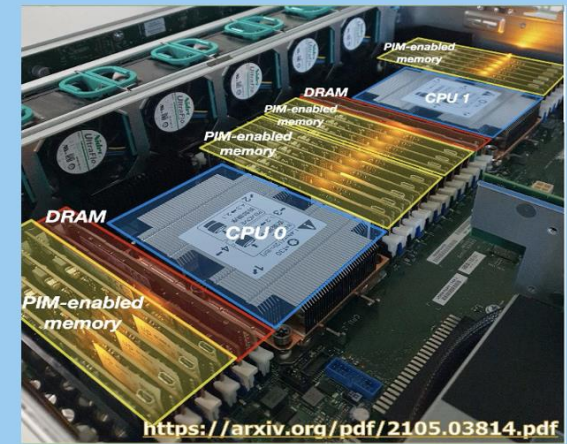
ISCA 2025 - 3rd Workshop on Memory-Centric Computing Systems

Saturday, 21st June, 2025, Tokyo, Japan

Organizers: Geraldo F. Oliveira, Dr. Mohammad Sadrosadati,
Ataberk Olgun, Professor Onur Mutlu

Program: <https://events.safari.ethz.ch/isca25-MCCSys/doku.php>

Overview of PIM | PIM taxonomy
PIM in memory & storage
Real-world PNM systems
PUM for bulk bitwise operations
Programming techniques & tools
Infrastructures for PIM Research
Research challenges & opportunities



<https://events.safari.ethz.ch/isca25-MCCSys/doku.php>

Tutorial on Memory-Centric Computing: Logistics

Geraldo F. Oliveira

<https://geraldofojunior.github.io>

PPoPP 2025

1st March 2025

Agenda

- **Prof. Onur Mutlu:**
Memory-Centric Computing
- Processing-Near-Memory Systems: Developments from Academia & Industry
- Programming Processing-Near-Memory Systems
- Coffee Break
- Processing-Using-Memory Systems for Bulk Bitwise Operations
- **Ataberk Olgun:**
Infrastructure for Processing-Using-Memory Research
- **Invited Talk by Prof. John Kim:**
Is it Memory-Centric or Communication-Centric?