

Mathis Petrovich

PhD Student



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Summary I am an ELLIS PhD student in the IMAGINE computer vision team of École des Ponts ParisTech (ENPC) and in the Perceiving Systems Department of Max Planck Institute for Intelligent Systems (MPI-IS). I am co-advised by Gül Varol (ENPC) and Michael J. Black (MPI). My PhD topic is to generate realistic and diverse human body motion in a controllable way (given labels or text instructions).

Research Experience

2020 – present : PhD student, ENPC/MPI, France/Germany

Subject: Controllable human motion synthesis via generative models

Advisors: Gül Varol and Michael J. Black

2019 - 2020 : Research Intern, RIKEN AIP, University of Kyoto, Japan

9 months

Subject: Machine learning and optimal transport

Advisor: Makoto Yamada

2019 : Research Intern, DxO Labs, France

6 months

Subject: Semantic segmentation and image matting

Advisor: Wolf Hauser

2018 : Research Intern, Carnegie Mellon University, United States

5 months

Subject: Object tracking in videos

Advisor: Martial Hebert

2017 : Research Intern, LIF, France

2 months

Subject: Correction strategy for natural language parser

Advisor: Alexis Nasr

Education

2020 - present: ENPC/MPI, PhD student

France/Germany

Controllable human motion synthesis

2016 - 2020: École Normale Supérieure (ENS) Paris-Saclay, MSc

Paris, France

Research engineering school, theoretical and applied computer science

- 2018 - 2019: ENS Paris-Saclay, Master 2

Master MVA: machine learning and computer vision

- 2017 - 2018: ENS Paris-Saclay, Master 1

Master of research in theoretical computer science (MPRI)

- 2016 - 2017: Diderot University, BSc

Theoretical computer science

2014 - 2016: Lycée Masséna

Nice, France

Preparation course for exams to enter French engineering schools

Academic Activities

Publications

- 2022, ECCV (Oral): Mathis Petrovich, Michael J. Black, Gül Varol**

TEMOS: Generating diverse human motions from textual descriptions.

- 2021, ICCV: Mathis Petrovich, Michael J. Black, Gül Varol**

ACTOR: Action-Conditioned 3D Human Motion Synthesis with Transformer VAE.

- **2022, ECML PKDD: Mathis Petrovich***, Chao Liang*, Ryoma Sato, Yanbin Liu, Yao-Hung Hubert Tsai, Linchao Zhu, Yi Yang, Ruslan Salakhutdinov, Makoto Yamada
FROT: Feature Robust Optimal Transport for High-dimensional Data.
- **2020, MLCB:** Dinesh Singh, Héctor Climente-González, **Mathis Petrovich**, Eiryo Kawakami, Makoto Yamada
FsNet: Feature Selection Network on High-dimensional Biological Data.
- **2020, arXiv: Mathis Petrovich**, Makoto Yamada
FALL: Fast local linear regression with anchor regularization.
- **2020, ICMEW:** Abhishek Goswami, **Mathis Petrovich**, Wolf Hauser, Frederic Dufaux
Tone Mapping Operators: Progressing Towards Semantic-Awareness.

Reviewing

- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) 2022
- European Conference on Computer Vision (ECCV) 2022
- Computers & Graphics 2021

Teaching

- 2021 - 2022: ENS Paris-Saclay, *Teaching Assistant*, M2 (Master MVA)
Object recognition and computer vision (RecVis)
- 2020 - 2021: ENPC, *Teacher*, L3 (Bachelor)
Introduction to programming, in C++ (1PROG)

Presentations

- 10/2022: **ECCV**, Israel, oral presentation
- 09/2022: **ECML PKDD**, France, presentation
- 05/2022: **MPI**, Germany, PS seminar
- 04/2022: **ENPC Retreat**, France, tutorial
- 03/2022: **A3SI**, France, PhD students' seminar
- 10/2021: **ICCV**, Virtual, poster
- 09/2021: **ELLIS Doctoral Symposium**, Germany, poster
- 09/2021: **Riken AIP**, Virtual, unit seminar
- 06/2021: **MSTIC doctoral school**, Virtual, Doctoral day

Open-source repositories

- 🔗 [Mathux/TEMOS](#)
- 🔗 [Mathux/ACTOR](#)
- 🔗 [Mathux/FROT](#)
- 🔗 [Mathux/FALL](#)

115 ★ 3 📄
207 ★ 28 📄

Miscellaneous

Research interests

- Computer vision
- Machine learning
- 3D human motion
- Generative models
- Optimal transport
- Local linear regression

Languages

- 🇫🇷 **French:** Native speaker
- 🇬🇧 **English:** C1 Level (IELTS Band 7)
- 🇩🇪 **German:** Basic Level

References

- **Gül Varol:** gul.varol@enpc.fr
- **Michael J. Black:** black@tuebingen.mpg.de