# PARITOSH SHARMA

Grad Student

*Université Paris Saclay - CNRS*

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## Publications

### PUBLISHED

Paritosh Sharma and Michael Filhol. "Multi-Track Bottom-Up Synthesis from Non-Flattened AZee Scores". In: *7th Workshop on Sign Language Translation and Avatar Technology: The Junction of the Visual & the Textual Challenges and Perspectives (SLTAT 7)*. Marseille, France, June 2022. URL: https://hal.archives-ouvertes.fr/hal-03721720

Paritosh Sharma. "A Layered Approach to Constrain Signing Avatars". In: *VISIGRAPP_DC 2023*. Scitevents. Lisbon, Portugal, Feb. 2023. URL: https://hal.science/hal-04143663

Paritosh Sharma and Michael Filhol. "Extending Morphs in AZee Using Pose Space Deformations". In: *2023 IEEE International Conference on Acoustics, Speech, and Signal Processing Workshops (ICASSPW)*. 2023, pp. 1–5. DOI: 10.1109/ICASSPW59220.2023.10193413

Paritosh Sharma and Michael Filhol. "Intermediate Block Generation for Multi-Track Sign Language Synthesis". In: *Proceedings of the ACM SIGGRAPH/Eurographics Symposium on Computer Animation*. SCA '23. Los Angeles, CA, USA: Association for Computing Machinery, 2023. ISBN: 9798400702686. DOI: 10.1145/3606037.3606837. URL: https://doi.org/10.1145/3606037.3606837

### IN REVIEW

Paritosh Sharma and Michael Filhol. "Sign Language Synthesis using Pose Priors"

Paritosh Sharma, Camille Challant and Michael Filhol. "Facial expressions for French Sign Language Synthesis"

## Teaching

| | | |
|---|---|---|
| Polytech Paris Sud | **Introduction to Computer Graphics**, Teaching Assistant | *2023 - Present* |
| IUT d'Orsay | **Introduction à l'Intelligence Artificielle(French)**, Teaching Assistant | *Spring 2023* |
| Polytech Paris Sud | **Interaction Humain-Machine(French)**, Teaching Assistant | *2023 - Present* |
| Polytech Paris Sud | **Introduction aux bases de données(French)**, Teaching Assistant | *2022 - Present* |
| IUT d'Orsay | **Informatique Graphique pour la Science des Données(French)**, Teaching Assistant | *2022 - Present* |
| IUT d'Orsay | **Introduction à la Programmation orientée Objet(French)**, Teaching Assistant | *Fall 2021* |

## Projects

- WebGL demonstration for Mass Spring Systems using popular algorithms like Euler methods, Verlet Integration, etc.
- 3D Underwater scene in PyOpenGL and GLSL.
- Global Game Jame 2023 - Rooty Defenders
- Global Game Jame 2024 - Crazy Stupid Horse
- Galactic Cricket - A VR cricket game for Meta headsets
- Oh Camel! - A MinCaml compiler

## Education

**Université Paris-Saclay - CNRS**  *Orsay, France*
PʜD  *2021 - Present*
- Thesis on the synthesis of Sign Language from AZee expressions
- Director: Dr. Michael Filhol

**Université Grenoble Alpes - ENSIMAG**  *Grenoble, France*
MS Iɴformatics  *2019 - 2021*
- Specialization in Graphics, Vision and Robotics
- M1 Thesis in interaction methods for eye tracking under Dr. Didier Schwab
- M2 Thesis in synthesis of sign language under Dr. Michael Filhol

**SRM University**  *Ghaziabad, India*
B.Tech. CSE  *2015 - 2019*
- Final year project in Finger Tracking under Mrs. Priyanka Sharma

## Professional Experience

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| Nov. 2018 - Apr. 2019 | **Intern**, Gesture Research |
| May 2018 - Aug. 2018 | **Student Developer**, Godot - Google Summer of Code |
| Dec. 2017 - Jan. 2018 | **Intern**, Cusmat Technologies |

## Skills

### Computer Graphics and Robotics

Armature animation, Kinematics, Physics-based animation(Rigid and Soft body simulation), Motion Generation(Diffusion and Transformers), Path tracing, noise functions, BRDF and micro-facet theory.

### Mathematics and Machine Learning

Multi-variable Calculus, Euler Integration, Auto-encoders, Diffusion models, Optimization(gradient descent and back-propagation, etc.), sampling and Monte Carlo estimators.

### Computer Science

C++, multi-threading, Python, PyTorch, OpenGL, GLSL, Blender, Unity3D, Qt3D, Godot, Octave, Java, HTML, CSS, JS(phaser.js), Git, Linux, Qt, CMake, Latex, Inkscape, GIMP and iMovie.

### Languages

English(professional), Hindi(native), French(Professional), French Sign Language(A1.2)

## Additional Information

### Talks

| | | |
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| 2023 | **3MT - 3 Minute Thesis**, Sign Language Synthesis in 3 minutes | *Orsay, France* |
| 2020 | **KDE Akademy 2020**, Qt3D backend for KStars | *Online* |

### Peer Review

Reviewer and Program Committee member for 8th Workshop on Sign Language Translation and Avatar Technology: The Junction of the Visual and the Textual Challenges and Perspectives (SLTAT 8) - IEEE ICASSP 2023

Reviewer for 9th International Conference on Movement and Computing - ACM MOCO'24

## Honors

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|---|---|---|
| 2023 | **Doctoral Consortium - VISIGRAPP 2023**, Best PhD project | *Portugal* |
| 2020 | **EIT Health - Grenoble i-Days 2020**, Bronze Medal | *France* |
| 2020 | **Campus France**, Charpak BCS Master's Scholarship | |
| 2011 | **17th UCMAS Abacus and Mental Arithmetic International Competiton**, 1st Runner Up | *Malaysia* |
| 2014 | **Technothlon, IIT Guwahati**, All India Rank 44 | *India* |

## Other Work

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|---|---|---|
| Present | **RéPAR**, Volunteer | *Paris, France* |
| 2020 | **Association de la fondation étudiante pour la ville**, Volunteer | *Grenoble, France* |
| 2020 | **INTEGRE**, Vice President - Events | *Grenoble, France* |
| 2018 | **Robinhood Army**, Volunteering and teaching at local slums | *India* |

## Other Interests

Cycling, Climbing, Hiking, Cooking, Chess