



PAUL STARKE


 Portfolio

 GitHub

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 Zurich, CH

ABOUT

Paul Starke is a Research Engineer at Meta working on data-driven motion synthesis. Prior to Meta, he worked as a ML Engineer at Electronic Arts and has 4+ years of industry experience in AI/ML engineering, graphics, and vision. He completed a M.Sc. and B.Sc. in Informatics and his recent work on motion synthesis has been published on scientific venues and presented at industry media releases.

TECHNICAL SKILLS

Animation:	Neural Motion Generation, Inverse Kinematics, Character Controllers, Motion Matching, Motion Phase Alignment, Mocap Visualization, (Hand) Object-Interaction, Body Tracking
Programming:	C#, Python, PyTorch
Technology/Tools:	Unity3D, Unreal Engine, LaTeX, Blender
Artificial Intelligence:	Deep Learning, AI-assisted coding

EXPERIENCE

META

Research Engineer

03/2025 – Present

Zurich, Switzerland

- Owned first-generation models of **GenAI Emotes**, presented at Meta Connect 2025 and shipped to millions of Meta Horizon users. Led the end-to-end system into product; from data processing through training and inference. Built a novel algorithm that reduced body jitter and foot sliding from corrupted pose-estimated keypoints.
- Built and open sourced **AI4AnimationPy**, an R&D Python framework for motion data processing, training, and inference.
- Led mocap data capture and quality assurance (QA) workstreams with external vendors for optimal data quality.

KINETIX

Research Engineer

11/2024 – 03/2025

Zurich, Switzerland

- Development of (video-to-motion) model and a synthetic-data pipeline in Unreal Engine.

META

Research Engineer

05/2023 – 11/2024

Zurich, Switzerland

- Developed an **AI-driven augmentation tool** in Unity to generate novel character motion from mocap data, increasing Digital Human motion diversity by $O(N^9)$.
- Built a framework to learn motion evaluation from user feedback. Model detects motion artifacts such as foot sliding and unnatural movement; integrated it into animation workflows to speed up QA.
- Learning **collision avoidance** from random noise without requiring real geometry during training, enabling full-body, hand-to-hand, and hand-to-object collision avoidance behaviors in real time.
- Developed a contact-aware inverse kinematic based hand motion variation pipeline for generating hand-object interactions.
- Designed VR body tracking for a “generative legs” solution (see [SIGGRAPH 2024 paper](#)) and adapted the research to company needs such as ML-based NPC animation.

ELECTRONIC ARTS

Machine Learning Engineer

10/2021 – 04/2023

Cologne, Germany

- Owned an AI-driven animation authoring framework for cinematic sequence creation, saving 90% of animator time versus traditional keyframing and 99% versus mocap sessions.
- Researched state-of-the-art motion in-betweening for arbitrary skeletal characters (see [SCA 2023 paper](#)).
- Supported the integration of phase-based motion generators with mocap data for AAA titles such as FIFA 23.

UNIVERSITY OF HAMBURG

Student Research Associate

01/2021 – 06/2021

Hamburg, Germany

- Research on neural question answering and question generations.

DEPARTMENT OF APPLIED COMPUTER SCIENCE LEIPZIG

Student Associate

09/2019 – 10/2020

Leipzig, Germany

- Development of front- and backend for the university social network.

EDUCATION

UNIVERSITY OF HAMBURG

Master of Science in Informatics

- Specialization in Computer Vision, Machine Learning, Robotics, Game Programming, and NoSQL systems.
- Master thesis on developing a state-of-the-art AI-driven motion in-betweening system (see Projects).
- GPA: 1.6 (Germany)

10/2020 – 02/2023

Hamburg, Germany

UNIVERSITY OF LEIPZIG

Bachelor of Science in Informatics

- Specialization in 3D Graphics/Geometry and Database Management.
- Bachelor thesis on developing an Authoring tool for AI-driven quadruped animations (see Projects).
- GPA: 2.5 (Germany)

10/2017 – 10/2020

Leipzig, Germany

PUBLICATIONS

CATEGORICAL CODEBOOK MATCHING FOR EMBODIED CHARACTER CONTROLLERS

Sebastian Starke, Paul Starke, Nicky He, Taku Komura, Yuting Ye

2024

ACM SIGGRAPH / TOG

MOTION IN-BETWEENING WITH PHASE MANIFOLDS

Paul Starke, Sebastian Starke, Taku Komura, Frank Steinicke

2023

ACM SCA / TOG

PROJECTS

AI4AnimationPy: Deep Learning for Character Animation [[Meta GitHub](#) | 250 stars]

Python, PyTorch, Raylib

2026 – Present

AI4Animation: Deep Learning for Character Control [[GitHub](#) | 8.5k stars]

Unity3D, C#, PyTorch

2020 – Present

Motion In-Betweening for Skeletal Characters [[GitHub](#) | 213 stars]

Unity3D, C#, Frostbite, C++, PyTorch

2022 – 2023

Animation Authoring for Neural Quadruped Controllers [[GitHub](#) | 95 stars]

Unity3D, C#, TensorFlow

2020 – 2021

SELECTED MEDIA

- **Two Minute Papers (Codebook Matching)** – [YouTube](#)
- **Unite 2024 – Runtime AI with Unity Sentis (AI4Animation)** – [YouTube](#)
- **Unity 6 (VR Motion Tracking)** – [Unity release notes](#), [YouTube](#)

REFERENCES

Sebastian Starke, Research Scientist, Meta, sebastian.starke@mail.de

Aayush Prakash, Head of Machine Learning for Synthetic Data, Meta, aayushp@meta.com

Yilei Li, Research Scientist Manager, Meta, liyilui@gmail.com

Taku Komura, Professor, University of Hong Kong, taku@cs.hku.hk