

# DR. JULIA CHATAIN

Senior Scientist, Future Embodied Learning Technologies (FELT), Singapore-ETH Centre (SEC)

📍 Singapore-ETH Centre, Singapore

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## EXPERIENCE

### Senior Scientist

Singapore-ETH Centre

📅 March 2024 – Now

📍 Singapore, Singapore

- Building a new large scale 5-year research programme: Future Embodied Learning Technologies (FELT)

### Group Leader of EduTech

LET, ETH Zurich

📅 May 2023 – Feb 2024

📍 Zurich, Switzerland

- EdTech R&D through co-design with lecturers and students
- Focus on AR/VR, AI-supported learning, and accessibility
- 🏆 Jacobs Foundation “Young Scholar” grant (120'000 CHF)

### Doctoral Student

ETH Zurich

📅 July 2019 – March 2023

📍 Zurich, Switzerland

- Embodied Interaction in Virtual Reality to Ground Mathematics
- Supervised by Prof. Sumner (Game Technology Center) and Prof. Kapur (Professorship for Learning Sciences and Higher Education)
- Head Teaching Assistant for “Computer Science I” and “Data structures and Algorithms” courses
- 🏆 ETH medal “Outstanding Dissertation” (under 8% of recipients)

### Research Engineer

Game Technology Center, ETH Zurich

📅 March 2017 – June 2019

📍 Zurich, Switzerland

- Developed a visual programming tool to create video games on mobile, presented at the World Economic Forum 2019
- Co-developed a playful Augmented Reality Christmas catalog for Franz Carl Weber
- Co-developed “Gnome Trader”, an Augmented Reality trading game for Smart Cities (European Project)

### Research Student

Potioc, Inria Bordeaux Sud-Ouest

📅 Sept 2015 – Jan 2017

📍 Bordeaux, France

- Developed Sympase, a Spatial Augmented Reality tool to let citizens share, through drawings and scribbles, their impression of a city
- Co-developed FlyMap, a Spatial Augmented Reality drone to guide students through the campus of Stanford University by projecting an interactive map on the floor

### Software Engineer Intern

Google

📅 July 2016 – Sept 2016

📍 Zurich, Switzerland

- Developed an evaluation tool for a reverse geocoding algorithm

## RESEARCH INTERESTS

Human Learning

XR

Human Computer Interaction

Embodied Interaction

Embodied Cognition

Avatar Embodiment

Abstraction

Mathematics Education

## SKILLS

Unity

C#

C++

Java

Python

R

Photoshop

Illustrator

InDesign

Student supervision

Team management

## EDUCATION

### MSc in Computer Science

École Polytechnique Fédérale de Lausanne

📅 2013 – 2015

📍 Lausanne, Switzerland

### Dipl. Ing. in Computer Science,

🏆 “Outstanding Investment”

École polytechnique

📅 2010 – 2013

📍 Paris, France

### Preparation to “Grandes Écoles”,

🏆 Elite class (MP\*, math and physics)

Lycée Descartes

📅 2008 – 2010

📍 Tours, France

## LANGUAGES

French

English

German



## HOBBIES

Traveling

Crafting

Reading

Brazilian Jiu-Jitsu

Video Games

Board Games

Blogging

## SELECTED PUBLICATIONS

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- **Chatain**, Julia, Robert W. Sumner, Manu Kapur. “Three Perspectives on Embodied Learning in Virtual Reality: Opportunities for Interaction Design”. CHI EA 2023.
- **Chatain**, Julia, Rudolf Varga, Violaine Fayolle, Manu Kapur, Robert W. Sumner. “Grounding Graph Theory in Embodied Concreteness with Virtual Reality”. TEI 2023.
- **Chatain**, Julia, Virginia Ramp, Venera Gashaj, Violaine Fayolle, Manu Kapur, Robert W. Sumner, Stéphane Magnenat. “Grasping Derivatives: Teaching Mathematics through Embodied Interactions using Tablets and Virtual Reality”. IDC 2022.
- Sansonetti, Luigi, Julia **Chatain**, Pedro Caldeira, Violaine Fayolle, Manu Kapur, Robert W. Sumner. “Mathematics Input for Educational Applications in Virtual Reality”. ICAT-EGVE 2021.
- **Chatain**, Julia, Danielle M. Sisserman, Lea Reichardt, Violaine Fayolle, Manu Kapur, Robert W. Sumner, Fabio Zünd, Amit H. Bermano. “DigiGlo: Exploring the Palm as an Input and Display Mechanism through Digital Gloves.” CHI PLAY 2020.
- **Chatain**, Julia, Olivier Bitter, Violaine Fayolle, Robert W. Sumner, and Stéphane Magnenat. “A Creative Game Design and Programming App.” MIG 2019.

## SELECTED TALKS

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- 🎧 “Learning math with embodiment in VR”. Selected young scholar, Jacobs Foundation Conference, Portugal, 2023.
- “Grounding Abstract Mathematics with Embodied Interaction”. Saarland University, Germany, 2022.
- Panelist “Children & computing: increasing gender diversity”. Interaction Design and Children (IDC) 2022.
- “Grasping Mathematics with Embodied Interaction in Virtual Reality: The Case of Derivatives”. Future Learning Initiative Colloquium, 2022.
- Panelist “IDC for Gender Balance: How can we engage more girls in informatics?”. Interaction Design and Children (IDC) 2021.
- “Grasping Mathematics in Virtual Reality”. Future Learning Initiative Colloquium, 2021.

## OUTREACH, SERVICE, AND VOLUNTEERING

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- Communications Committee member, Special Interest Group on Computer-Human Interaction (SIGCHI '23-24).
- Web Chair, Annual Symposium on Computer-Human Interaction in Play (CHI PLAY '21)
- Student Volunteer, Annual Symposium on Computer-Human Interaction in Play (CHI PLAY '20)
- Promoting Computer Science and Mathematics to young girls and women: Girls Code Too Switzerland, Coding Club des Filles EPFL, Schnupperstudium ETH, Django Girls Bordeaux and Lausanne, etc
- Organizing Game Events for the ETH Game Technology Center and Disney Research Zurich

## TRANSFER AND ENTREPRENEURSHIP

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- Supervisory board member for Girls Code Too (2021-2022)
- Learning Sciences consultant for Hackworth Ltd (2020-2021)
- Scientific advisor for Enlightware GmbH (2018-2021)
- Computer graphics intern for Fitle (2014)

## SUPERVISION

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- Martina Kessler - Master Thesis - Feb. 2023 - Playful Experiences with Embodied Interaction in Augmented Reality
- Robin Hänni - Bachelor Thesis - Dec. 2022 - Virtual Reality Cytology Lab for Risk Awareness
- Dominic Weibel - Master Thesis - Sept. 2022 - Co-Designing a Computer Science Learning Game for Girls with Girls
- Bibin Muttappillil - Bachelor Thesis - March 2022 - Design and Evaluation of Embodied Interaction in Virtual Reality for Learning Derivatives
- Bodo Brägger - Master Thesis - Feb. 2022 - Gender Equality in Computer Science: Video Games as Preparation for Future Learning
- Rudolf Varga - Master Thesis - Sept. 2021 - Learning Graph Theory with Embodied Interaction in Virtual Reality
- Luigi Sansonetti - Master Thesis - May 2021 - Mathematics Input for Educational Applications in Virtual Reality
- Virginia Ramp - Master Thesis - Oct. 2020 - Embodied Analysis in Virtual Reality
- Lea Reichardt - Bachelor Thesis - Dec. 2019 - VR Game Prototype for Hand Tracking and Projection