

Chanattan Sok

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Current Position

I am a master student in Computer Science at [École normale supérieure](#) (ENS) de Rennes and Sorbonne University, in France. I am interested in strategic agents for negotiation, multi-agent coordination and cooperation, or decision-making (aid) in general. I like to apply science to societal concerns, or to study social behaviors. I have been using game and social choice theories in economics and public policies, and agent-based modelling to study human and robotic behaviors. Recently, I have been interested in (MA)RL and recommender systems.

Education

Master's Degree in Computer Science – AI2D (Artificial Intelligence, Algorithms, Interaction, Decision Making) - Sorbonne University, Paris, France <i>Previously named Androide master. The master's degree focuses on on research in autonomous agents, decision-making models, AI algorithms for complex systems including MARL and social choice.</i>	Sept 2025 - May 2026
ENS Diploma in Computer Science - École normale supérieure de Rennes, France	Aug 2022 - Aug 2026
B.Sc. in Fundamentals of Computer Science - École normale supérieure de Rennes & Univ. Rennes, France	Aug 2022 – Aug 2023
2nd year of B.Sc. in Computer Science - Sorbonne University, Paris, France • Ranked 5 th /172 in computer science and mathematics.	Sept 2021 - May 2022
Preparatory classes to Grandes Écoles - Lycée Albert Schweitzer, Raincy, France	Sept 2020 - May 2021

Research Positions

Research Assistant, LAMSADE (Dauphine–PSL, Paris) <i>Fairness in railway networks: graph theory and social choice.</i> Supervised by J. Lang , A. Novaro , F. Sikora . • Python software to compute equity indices on editable railway networks. • Proposed and evaluated fairness metrics on GIS-based real railway networks (e.g., France vs Germany).	May–Aug 2025 GitHub
Research Fellow, City Science Lab (HCU Hamburg × MIT Media Lab) <i>Urban digital twins and ABM for climate policy in Hamburg (2040s).</i> Supervised by A. Grignard , R. Herzog . • GAMA-based urban model using GIS data for policy support; collab. with Hamburg Climate Authority. • Presented at Digital Urban Twins 2025 .	Feb–May 2025 GitHub
Research Assistant, CHROMA (Inria & INSA Lyon) <i>Resolving pedestrian spatial conflicts with ABM & social choice.</i> Supervised by O. Simonin . • Designed CNM model (negotiation-based pathfinding) outperforming SFM and CBS-MAPF. • CNM shows up to 10 times faster-computed solutions than CBS-MAPF, and as efficient, with human-like behavior.	Sept–Dec 2024 GitHub
Research Assistant, Programming Languages Group (Aarhus Univ.) <i>Java type inference and reduction in Flix.</i> Supervised by M. Madsen . • Proposed novel Java type representations; improved Flix's modularity. • Implemented Java interoperability in Flix compiler, made in Scala 2.	May–Aug 2024
Research Assistant, SHAMAN (IRISA, Univ. Rennes × Thales) <i>WebAssembly for data management in serverless environments.</i> Supervised by L. d'Orazio . • First-author paper at SSDBM 2024 (<30% acceptance). • Developed “Blossom” to benchmark out-of-the-web Wasm vs native Rust join operations.	Sept 2023–May 2024 GitHub
Student Research Fellow, ENS Rennes × Anticor <i>Anti-corruption tooling: data, UX/UI and LLMs.</i> Supervised by J. Perez . • Designed assistant tool for lawyers using existing LLMs and structured data (SQL, pandas). • Laid foundations for interdisciplinary AI x law collaboration with Anticor NGO.	Nov 2023–May 2024 Press article
Research Assistant, MAS Team (LIP6, Sorbonne Univ., CNRS) <i>ABM modeling of international negotiations.</i> Supervised by N. Maudet , A. Beynier .	May–July 2022 GitLab

- Re-implemented and extended significantly Earnest’s negotiation model (Putnam’s two-level game) using Mesa in Python. Research showed counter-intuitions on multi-agent deliberation.
- Joined as a participant [NEGOCLIM](#) with CES economists (e.g., [Zuber](#), [Rusinowska](#)).

Projects

NEGOCLIM project (summer 2023)	Website
The project brings together researchers from economy, CS, humanities to study climate negotiations. It is funded by the CNRS. I participated during a research internship by proposing a generic negotiation model between agents.	
An ENS Rennes - Anticor NGO (Law x CS) project (2023 - 2024)	GitHub
Helped as a research associate detect fraud in public procurement using CS techniques with Anticor.	
Winner – Palm’Hackathon ISTIC, Univ. Rennes (2023)	GitHub
Built a game in team in Rust on “investigation” theme in under 24h. Ranked 1st among 8 teams.	
Freelance developer (2015-2021) — over 10 repositories including hackathons, ABM models, and Java/Python/Rust/C++ projects	GitHub
<i>For each of my work, I try to code a tool or software to automate protocols, and ease work continuation with visuals.</i>	
Developed Java Swing/FX automation tools: isometric map editor, scrapers, data pipelines, UI software (visualization and editing, e.g., graphs). Crypto-oriented blockchain project made in C, 2D games, e.g., war of tanks in C++.	

Publications

Resolution and simulation of spatial conflicts between pedestrians based on social choice theory	June 2025
<i>Chanattan Sok, O. Simonin. ECAI 2025, Bologna, Italy — Under review</i>	
Resolution and simulation of spatial conflicts between pedestrians based on social choice theory	May 2025
<i>Chanattan Sok, O. Simonin. JFSMA 2025, Dijon, France — To be presented</i>	
WebAssembly Serverless Join: A Study of its Application	July 2024
<i>C. Sok, L. d’Orazio, R. Tekin, D. Tombroff. SSDBM 2024, Rennes</i> 10.1145/3676288.3676305	

Teaching

Tutor founder, Univ. Rennes – ISTIC	Sept 2023–Mar 2024
<i>Founded CS/mathis tutoring program for bachelor students. Led and organized sessions.</i>	
Guest lecturer, CalPoly (California)	Jan 2024
<i>Lecture on ABM and negotiation models in MAS course. Invited by Pr. F. Kurfess.</i>	
CPES science tutor (maths/CS), Lycée Châteaubriand, Rennes	Sept 2023–Mar 2024
<i>Tutoring in selective preparation program (CPES).</i>	
Tutor in general science (Cordées de la Réussite), Rennes	Sept 2023–Mar 2024
<i>Mentored high school students from underrepresented backgrounds.</i>	
Teaching assistant, Collège Évariste Galois, Paris	Sept 2021–Mar 2022
<i>Taught math/science classes and assisted with classroom management. Selective program.</i>	
Private CS/Maths tutor (freelance)	2015–2024
<i>Taught Python, Java OOP, C/C++, algorithms to students from middle school to university.</i>	

Additional Experiences and Activities

Co-president, Oenology Club, ENS Rennes	Sept 2023–Mar 2024
<i>Led wine-tasting events, presentations, and budget management.</i>	
Tutor Founder, Tutorat ISTIC, Univ. Rennes	Sept 2023–Mar 2024
<i>Organized CS/Maths tutoring sessions for B.Sc. students and liaised with administration.</i>	
Finalist, ENS Rennes Eloquence Contest.	2023
Treasurer, RJMI Rennes 2023	Oct 2022–Mar 2023
<i>Led treasury management in a major STEM outreach event for high school girls, promoting CS and Maths excellence to advance equal opportunities in higher studies.</i>	

Languages

Tech: Java 7/8, Python, Scala 2, C, C++, SQL, OCaml, Rust, Coq, GAMS
Non-tech: French (native), English (proficient), German (notions)