Ettaghi Chahyn

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Education

Télécom Paris — Paris, France
Summer School — *June 2026 - July 2026*
Program covering diverse ML related topics (*Transformers, Constraint learning, Diffusion Models, xAi, etc.*) through speakers work with lectures and lab work. Organised by *Hi!Paris* with *IP Paris*. Details here. Ranked 1^{st} among French CS engineering schools.

TsingHua University — Hsinchu, Taiwan
Exchange Semester — *Feb 2027 - June 2027*
Academic exchange within the M.Sc. programme hosted by NTHU.
Coursework: Gas Turbine Theory, ML Theory, Statistical Mechanics (I), JAX, Modeling and Computation of EnVar Approach.

Institut National Polytechnique ENSEEIHT — Toulouse, France
M.Sc. (Fluid Mechanics and Energy) — *Sep 2025 - June 2028*
- **Mathematics**: Probability, Optimization, Statistics, Analysis, Numerical Methods for PDEs
- **Physics**: Fluid Mechanics (II), Microfluidics, Thermodynamics, Mechanics, Wave Dynamics

Lycée Carnot / Lycée Claude Bernard — Paris, France
B.Sc. (Engineering) — Preparatory Classes for Engineering Schools (PCSI → PSI)* — *Sep 2022 - August 2025*
Intensive learning in Mathematics and Physics, English and Philosophy

Relevant projects

Quantum Lattice Boltzmann Methods | *Python (Qiskit)* — Oct 2026
- Quantum computing hackathon with CERFACS: implemented a QLBM solver with digital computing.
  - Built the LBM baseline (D1Q3, D2Q9) and quantum circuits for diffusion and advection–diffusion, matching classical LBM to 10^{-15}.
  - Optimized the circuit (block-encoding and streaming). Presentation here

Constrained PINNs | *Python (PyTorch), Fortran, Kaggle* — Jul - Oct 2026
- Benchmarked 3 solvers on a 2D advection-diffusion PDE: FVM, a baseline + a constrained PINN, inspired by L. Chamon's course.
  - Methods: primal-dual Lagrangian training, mass conservation constraint and error-driven resampling of collocation points.
  - Results: the baseline overfit its training points, the mass constraint fixed the symptom with trade-offs while the error driven resampling fixed the root cause (best accuracy at the cost of looser boundary conditions). Paper here

National road safety innovation award | *Python* — April 2026
- Developed a road safety evaluation tool using YOLOv8 and Pupil Labs glasses data. Quantified dangers near schools by modeling the relationship between user gaze and complex urban infrastructure.
  - Created a safety metric for decision making in urban risk assessment.
  - Awarded **2nd place with €5k** by the French Ministry of the Interior.

Professional Experience

Intern — July - Aug. 2026
Onera - The French Aerospace Lab — *Toulouse, France*
- Designed and built a Tkinter HMI that automates post-acquisition analysis for a drone-embedded MIMO radar system, replacing manually-run, hardcoded Python scripts. View report

Assistant math professor — Sep 2025 - Present
Lycée Saint-Joseph — *Toulouse, France*
- Full-class mathematics lessons + writing assignments for about ten high school students preparing for CPGE.

Extracurricular Activities

Ambassador Hackathon Hub — July 2026 - Present
Hackathon Hub — *Europe*
- Represent Toulouse within Hackathon Hub, a platform that makes hackathons easier to discover and connects communities across EU.

CTO N7 Consulting — Sep 2025 - Present
N7 Consulting - Junior Enterprise — *Toulouse, France*
- CTO within the school's Junior Enterprise, developing automation tools (Apps Script, n8n) and websites, while managing clients appointments, negotiations and contributing to over €100K in revenue. Website here. Organised a hackathon with La Mêlée Numérique.

Skills and Interests

- **Programming Languages**: Python, Web (HTML/CSS/JS), basics in C, Bash, MySQL, Fortran90
- **Tools**: VSCode, Typst, SolidWorks, OpenFOAM+Paraview, Google suite, NumPy, Pandas, Scikit-learn
- **Languages**: French (native), English (bilingual), German (basic), Japanese (basic)
- **Sports**: Boxing, Skateboarding