

EDUCATION

Smichovska stredni prumyslova skola a gymnazium <i>High school diploma</i>	Prague, Czech Republic <i>September 2022 – June 2026</i>
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EXPERIENCE

University of Pennsylvania <i>Visiting and external student researcher</i> - On-site research internship on reinforcement-learning navigation policies grounded in human-inspired memory systems. - Advised by Professor Tyler Bonnen.	Philadelphia, Pennsylvania <i>July 2026 – present</i>
UC Berkeley (Berkeley AI Research) <i>Visiting and external student researcher</i> - Remote collaboration during the school year; full-time in person in Berkeley, CA for Summer 2025 (Jul–Aug). <i>Characterizing test-time computation in humans and machines</i> (first author; under review at NeurIPS 2026, poster at CCN 2026): showed that distribution shift predicts both vision-model and human 3D shape perception. <i>Evaluating spatial perception in humans and machines</i> (second author, CCN 2026, with UPenn): a procedurally generated tabletop-scene benchmark for measuring 3D scene accuracy in Vision encoder and Humans - Building an identity-consistent human tracker for long-range videos. - Advised by PhD student Neerja Thakkar and Professor Jitendra Malik.	Berkeley, California <i>Nov 2024 – present</i>
xAI <i>Grok tutor</i> - Remote collaboration. - Localized product surfaces and documentation into Czech.	Palo Alto, California <i>Nov 2025 – April 2026</i>
ETH Zurich and Paul Scherrer Institute <i>Visiting student researcher</i> - Hybrid remote and on-site collaboration, including two-week research visits to the lab when needed. - Built 2 camera-control systems for realtime ion trap capturing and data processing. - Built ion dynamics simulation for optical atomic-clock experiments tailored to the lab’s trap design. - Built DC control system of the ion trap electrodes with an intuitive web-based UI.	Zurich, Switzerland <i>Feb 2024 – Sep 2024</i>
Palacký University <i>Research Intern</i> - Hybrid remote and on-site collaboration, including three-week research visits to the lab when needed. - Built ion-trap laser control software; latency cut from 1 ms to 10 μs.	Olomouc, Czech Republic <i>Dec 2023 – Feb 2024</i>
Czech Technical University <i>Student Researcher</i> - Built panoptic segmentation algorithm with up to 3× faster processing. - Representation learning on DINOv2 features for robotics planning.	Prague, Czech Republic <i>Jan 2024 – Jan 2025</i>
Czech Academy of Sciences <i>Institute of Information Theory and Automation</i> <i>Researcher</i> - Built open-source river-segmentation model using Transformers for historical maps; now used by Charles University Department of Applied Geoinformatics to study river shape change (GitHub code).	Prague, Czech Republic <i>Dec 2023 – Nov 2024</i>
Kooperativa insurance company (Vienna Insurance Group) <i>IT Intern (LLM Chatbots and AI Enablement)</i> - Built internal LLM chatbots for the customer support team. - Authored guides on AI and its use in company workflows.	Prague, Czech Republic <i>Aug 2023 – Jun 2024</i>

SELECTED CONFERENCE PRESENTATIONS & EXHIBITIONS

- 9th Annual Conference on Cognitive Computational Neuroscience (CCN)**

New York, USA

August 3rd – 6th, 2026

Distribution shift predicts the dynamics of 3D perception — first-author extended abstract and poster.

Evaluating spatial perception in humans and machines — second-author extended abstract and poster.
- Y Combinator Summer School 2026**

San Francisco, California, USA

Accepted participant.
- PyTorch Conference 2025**

San Francisco, California, USA

October 22nd – 23rd, 2025

Talk: *Controllable Generation of Synthetic Video Data with Human Motion* ([Link](#))

- **IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2025**
Nashville, Tennessee, USA
June 11th – 15th, 2025
Workshop paper: *Synthetic human action video data generation with pose transfer* ([Link](#))
- **2025 IEEE 19th International Conference on Automatic Face and Gesture Recognition (FG)**
Clearwater Beach, Florida, USA
May 26th – 30th, 2025
Paper: *Can Pose Transfer Models Generate Realistic Human Motion?* ([Link](#))
- **EXPO World’s Fair 2025**
Osaka, Japan
April 13th – October 13th, 2025
Built an interactive sign-language translation experience in the Czech Pavilion.
- **26th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS)**
St. John’s, Newfoundland and Labrador, Canada
October 28th – 30th, 2024
Paper: *Pose-aware Large Language Model Interface for Providing Feedback to Sign Language Learners* ([Link](#))

CURRENT INDEPENDENT PROJECTS

- **An Euler Product for the Energy Cascade**
Field: Mathematical Fluid Dynamics, Statistical Physics, and Analytic Number Theory ([Link](#))
Sole-authored paper developing an Euler-type spectral determinant over dyadic Littlewood–Paley scales for the 3D Navier–Stokes equations, in analogy with completed L -functions
 - Proved convergence of the determinant on a right half-plane for every Leray–Hopf weak solution, and meromorphic continuation to all of $\mathbb{C}$ along strong solutions (showing the continuation follows from parabolic (Gevrey) smoothing rather than any functional equation.)
 - Proved that no functional equation can hold in the tempered regime, for the completed function and for the bare determinant itself, independently of archimedean normalization; identified the pole-confinement hypothesis exactly as a $\dot{B}_{\infty,\infty}^1$ bound, proven equivalent to global regularity.
 - Derived the realified Sabra shell-model transfer matrices in closed form and verified them numerically (energy drift 10^{-14} , Jacobian agreement 6×10^{-13}); in a statistically steady turbulent state the pole front advances with slope 0.549 ± 0.007 , matching the independently measured intermittency-corrected cascade exponent 0.541 to within 1.5%.

MEANINGFUL AWARDS

- **Forbes 30 Under 30 (Czech Republic), 2026**
Named to the Czech Forbes 30 Under 30 list ([Link](#)).
- **Regeneron ISEF 2025 — Finalist**
Represented the Czech Republic in Columbus, OH, USA, with the project *3D Shape Understanding by Artificial Intelligence* ([Link](#)).
- **Beijing Youth Science Creation Competition (BYSCC) 2025 — Gold Medal**
Represented the Czech Republic in Beijing, China ([Link](#)).
- **Malaysian Invention and Design Society (MINDS) — Gold Medal**
International invention award received at BYSCC 2025.