Goran Ivančić

(+385) 91 542 0893
goran.ivancic@fer.hr
eikasia.net

Education

Faculty of Electrical Engineering and Computing Zagreb, Croatia
Bachelor of Computer Engineering 2024 - 2028 *(expected)*

- GPA: 4.62/5.00
- Research focus: Computational mechanisms in neural networks and cybersecurity.
- Relevant coursework: Mathematical Analysis, Computer Architecture, Information Theory, Competitive Cybersecurity Skills

DOBA Faculty Maribor, Slovenia
Bachelor of Applied Psychology 2024 - 2028 *(expected)*

- GPA: 9.00/10.00
- Research focus: Cognitive & Computational Neuroscience, Spatial Cognition, Decision-Making Models
- Relevant coursework: Clinical Psychology, Cognitive and Neuroscience, Decision-Making Cognition

Publications

1. **Goran Ivančić, Nikolina Frid, Yuxiu Shao** (Manuscript in preparation, targeting arXiv). Biological Substrates of Neuroevolutionary Algorithms - Single Layer Simple Mechanisms and Multi-Layer Compositions

Conference Posters

1. **Goran Ivančić**. Moore Machine architecture implemented purely on a multi-layer Hopfield network: a different perspective of sequential memory in humans, 2025. *Sixth International Conference of Mathematics of Neuroscience and AI*
2. **Goran Ivančić**. Biological Neural Machines – Creating a Computer on Biologically Restrained Neural Networks, 2025. *IRCN and Chen Institute Joint Course on Neuro-inspired Computation*

Projects

Bi-Modal Neural Automata Construction
University of Zagreb 2024.01 - Present

- Focus: Core project integrating theoretical computer science (specifically FSM) with neural architectures focusing on using biological mechanisms
- Tools: Python (simulations), analytical derivation of models
- Methods: Dynamical systems analysis via numerical simulation; modelling recurrent neural network architectures implementing finite-state behaviour

Developing Open-Source Low-Cost EEG Systems
Independent project 2025.09 - Present

- Focus: Designing and learning about electronics for signal processing. Specifically utilising OpenBCI as the starting point
- Notes: Currently in theoretical design phase
- Methods: Introductory EEG signal processing concepts, noise characterization, and low-cost system design constraints

Homelab designs
Independent project

- Server for running complex simulations and controlling other projects remotely using reverse proxy
- Raspberry pi using GPIO and UART for communication with other devices, specifically radio devices

Work Experience

Višnjan Astronomical Society Program | STEM Assistant 2025.08
- Prepared and led workshops on programming, astronomy, and complex STEM materials.
- Contributed to research projects, preparing a dataset analysis for the Vera C. Rubin Observatory

Faculty of Electrical Engineering and Computing | Lab Demonstrator 2024 - 2025
- Assisted students during Digital Logic lab exercises; instructed VHDL and FPGA programming principles.

Speedcubing Hrvatska | ICT System Administrator 2025.01 - Present
- Developed and maintained website and content management systems.
- Managed digital infrastructure and full-stack technical support.

Zlatni Zmaj | Volunteer Tutor (Underprivileged Youth) 2022.11 - 2024.06
- Tutored children from underprivileged families in different school subjects.

Awards & Honors

- HackingNight CyberSecurity Challenge (University Algebra Bernays, 2025.10) - 1st place
- European CyberSecurity Challenge (NASK Poland, 2025.10) - 19th place with team croatia
- Open European CyberSecurity Challenge (x3CTF, 2025.09) - 30th place individually
- Hackultet (CERT, 2025.05) - 4th place
- FIRST LEGO League World Finals (FIRST, 2019) - Judges Award recipient
- National informatics competition (AZZO, 2019) - 1st place

Skills & Interests

Languages: Croatian (native), English (C1), German (A1), Japanese (N4 - A2)

Programming: `Python & C/C++`, `VHDL/FPGA & MATLAB`, `Docker & Linux`

Neuroscience & Comp. Modeling: Local Neural Dynamics, Attractor Networks, Finite State Machines, BCI Signal Processing, Information Theory

Cybersecurity: Reverse Engineering, Cryptography

Creative hobbies: Writing, Dungeons & Dragons, Drawing