Daniel Burger, M.Sc.

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Interdisciplinary **neuroengineer developing augmented progressive brain replacement** — a radical procedure for treating neurodegeneration, brain injuries, and ageing through patient-specific neural grafts designed for piece-wise replacement and neuronal-level modulation. **I lead Eightsix Science, an applied neuroscience startup** I founded, to combine neural tissue engineering, biohybrid brain-computer interfaces, and microsurgery to seamlessly integrate these optimised grafts with the host's brain. Ultimately, **we aim to achieve ectopic cognitive preservation**, an approach to sustain cognition outside its original biological context and potentially within virtual reality.

Building on a **background in wetware computing, brain-computer interfaces, and computational neuroscience**, I have contributed to projects ranging from whole-brain simulations at the Blue Brain Project to closed-loop control of virtual avatars using human brain organoids at FinalSpark.

I bring rigorously systematic and holistic **strategies to overcoming ageing as a disease** and pushing the boundaries of neurotechnology. Fundamentally, I treat death as an engineering challenge to be solved and aspire to **research better substrates for synthetic consciousness** in the long run.

Work Experience

Industry Positions

Eightsix Science Ltd — London, United Kingdom

Founder and Neuroengineer (CEO & President) — *August 2024 – now*

- Orchestrating the science-informed neuroengineering of augmented progressive brain replacement, leading the research and development pipeline for 3D bioprinting of optimised neural grafts, incorporating patient-specific *in silico* anatomical reconstructions from neuroimaging data, biohybrid system integration and validation, development of minimally invasive microsurgical implantation procedures, and scaled-up laboratory automation for high-throughput tissue production and characterisation.
- Building and managing a small multidisciplinary team with expertise in neuroscience, neurotechnology, neural tissue engineering, brain-computer interfaces, neurosurgery, software engineering, artificial intelligence, virtual reality, neuroethics, and applied phenomenology.
- Driving progress towards achieving ectopic cognitive preservation, including the development of technologies for long-term *ex cranio* brain maintenance and advanced, immersive virtual reality systems (full-dive VR) capable of providing sensory input and interaction within simulated environments.
- Conducting applied research to explore future cognitive preservation technology, using principles of contemporary consciousness research to understand the mechanisms of cognition and examine possibilities of substrate-independent minds — cognitive processes supported by non-biological substrates.
- ***Technical Skills:*** *3D neural bioprinting, cell culturing, electrophysiology and lab work, artificial intelligence engineering (LLM agents), machine and deep learning, computational modelling and simulation, high-performance cloud computing, scientific and symbolic computing, graphics programming, automated computer-aided design (CAD), surgical robotics (surgery, manipulation, micro-assembly), image and statistical analysis, fault-tolerant and co-located large-scale software engineering.*
- ***Entrepreneurial Skills:*** *Holistic leadership, strategic planning, fundraising, grant writing, interdisciplinary project and team management, rapid prototyping and design, technology commercialisation, regulatory navigation, intellectual property development, rigorous systems thinking, pragmatic problem-solving, communication and marketing, public speaking, negotiation, talent acquisition.*

FinalSpark Sàrl Vevey, Switzerland

Synthetic Intelligence Engineer (R&D Engineer) *August 2023 – October 2024*

– Led research on training human brain organoids in reinforcement learning tasks, embedding them as embodied avatars in multi-agent virtual environments and 3D simulations; applied contemporary reinforcement learning theories and systems neuroscience principles to design experiments probing reward prediction error, neuroplasticity, and adaptive behaviours.

– Engineered closed-loop control systems and developed the Neuroplatform's APIs and Python and TypeScript SDKs for real-time interfacing with brain organoids via multi-electrode arrays (MEAs); conducted hands-on wet lab work, including organoid culture, electrophysiological recordings, stimulation parameter optimisation, and neurotransmitter modulation in microfluidic chips.

– Developed full-stack applications and demos, including 3D simulations, to showcase brain organoid capabilities; leveraged agentic LLMs for autonomous experimental design, large-scale data analysis, and automated scientific reasoning, advancing understanding of synthetic biological intelligence.

Blue Brain Project (EPFL Campus Biotech) Geneva, Switzerland

Neuroinformatician (Senior Software Engineer) *November 2023 – July 2024*

– Contributed to the digital reconstruction and simulation of neuronal morphology and synaptic activity, employing advanced physics simulations and Python scripting to create accurate models of brain cells and circuits for large-scale brain simulations.

– Engineered scalable data processing pipelines and web services deployed on cloud infrastructure, facilitating the preparation, dissemination, and interactive exploration of neuronal models and simulation data; contributed to the transition from an in-house supercomputing (HPC) setup to AWS cloud, leveraging the scalability and flexibility of cloud resources for simulations and data analysis; explored the use of LLMs for automated literature review, retrieval of relevant scientific papers, and assisting in the generation of scientific content based on simulation results.

– Developed and maintained full-stack software solutions in Python and JavaScript/TypeScript to enhance neuroinformatics research via Blue Brain Nexus, an open-source knowledge graph, enabling efficient management, integration, and querying of massive neuroscience datasets.

IDUN Technologies (ETH Spin-off) Zürich, Switzerland

Brain-Computer Interface Developer (Software Engineer) *October 2021 – July 2023*

– As the first software engineer hired with neuroscience expertise, played a pivotal role in developing a full-stack neurotechnology platform integrating proprietary in-ear electroencephalography (EEG) hardware, embedded software, Bluetooth Low Energy (BLE) communication, mobile companion apps (iOS and Android), and cloud-based machine learning models for real-time brain data analysis.

– Architected and implemented a scalable cloud infrastructure and API, including a bi-directional real-time streaming API, for data ingestion, processing, and analysis, enabling novel applications such as sleep stage classification, artefact removal and utilisation, and focus/drowsiness detection, leveraging in-house designed ML models based on proprietary neuroscientific experiments and data labelling.

– Led the software development efforts and a team of five engineers; developed Python and TypeScript SDKs for neuroscientists and BCI developers to interface with the platform's API and hardware; created VR demos, contributed to neuroscientific experiments, automating and scaling data collection with a custom PsychoPy pipeline, establishing the company as the first to develop an unobtrusive, full-stack BCI system designed for the mass market and not just patients.

Hexagon Digital Reality (Leica Geosystems Holdings) Zürich, Switzerland
3D Software Developer (Contractor) *March 2021 – September 2021*

– Contributed as a software contractor to the research and development of HxDR, a cloud-based platform for the visualisation and collaboration of geospatial supermesh datasets (2×2 cm scan resolution), aligning with Hexagon's Smart Digital Reality initiative to create immersive, real-time digital twins of the physical world.
– Re-architected the platform's client-side 3D application and microservices, refactoring legacy code and designing a GraphQL API to enhance performance and scalability; contributed to the WebGL library, leveraging WebAssembly and AssemblyScript for high-performance real-time 3D visualisations of point clouds and mesh reconstructions.

Mediakanzlei (acquired by Mediaplus Suisse) Zürich, Switzerland
Interactive Media Developer (Team Lead) *January 2017 – March 2021*

– Led a team of five developers, designers, and apprentices, driving the development of novel digital advertising solutions for cross-industry clients (e.g., luxury, telecommunications, retail), including custom algorithms, full-stack web applications, 3D visualisations, and interactive ad experiences, establishing Mediakanzlei as a go-to agency for innovative and technically challenging projects (which helped the agency to be ultimately acquired by Mediaplus for their technical excellence).
– Oversaw the creation of data-driven campaign solutions, including interactive dashboards and tech tools, utilising data management platforms (DMPs) and custom-built solutions to manage, analyse, and visualise large-scale customer datasets, enabling highly targeted and effective advertising campaigns.
– Explored emerging technologies, such as AI-powered campaign generation, chatbots and text completion (pre-GPT-3.5) to enhance user engagement and investigated the application of neuromarketing principles through preliminary experiments using (non-clinical) EEG and eye-tracking to assess user intent and ad effectiveness.

Academic Positions

Education

King's College London London, United Kingdom
Master of Science in Applied Neuroscience *2023 – 2024*

– **Graduated with distinction**, demonstrating advanced knowledge and research skills in applied neuroscience, integrating both theoretical and practical interests in neuroengineering; my research focus combined the analysis of *in vitro* brain organoids and *in silico* computational brain models with practical applications in neural tissue engineering and bioprinting.
– **Thesis:** My synoptic research project developed a preliminary proof of concept for a neuroimaging-guided pipeline for automatic reconstruction of patient-specific brain geometries into 3D-bioprintable scaffolds, enabling personalised neural tissue replication for progressive brain replacement (precursor work for my company). Thesis title: *Neuroimaging-Guided Pipeline for Automatic Reconstruction of Patient-Specific Brain Geometries into 3D-Bioprintable Scaffolds*
– **Key Courses:** Brain-computer interfacing and neuromodulation, neural tissue engineering, advanced synoptic project (research proposal), biological foundations of neuroscience, research techniques in neuroscience, psychological foundations of neuroscience, mental health in the community, contemporary advances in neuroscience, neurodevelopmental disorders, critical analysis of research ethics, neuroimaging, psychology and neuroscience of psychosis, brain organoids, meta-research and quantitative analysis for neuroscientific studies

Middlesex University London Zürich, Switzerland
Bachelor of Science in Web Development *2018 – 2022*

– **Graduated with First Class Honours** (Summa Cum Laude) from a broad and technical curriculum, demonstrating excellence in both full-stack development and advanced web engineering. My cross-disciplinary research during this period focused on simulation software, fault-tolerant cloud systems, 3D/graphics programming, and bidirectional non-invasive brain-computer interfaces.
– **Thesis:** My bachelor's thesis examined the feasibility of enabling general applicability for brain-computer interface software through cloud computing and defined a novel paradigm for brain-computer interfaces called Neural/Cloud Interface (N/CI), which was crucial for my role at IDUN Technologies and served as a foundation for my Master's studies in applied neuroscience. Thesis title: *Enabling General Applicability for Brain-Computer Interface Software Through Cloud Computing*
– **Key Courses:** Asynchronous architectures, API design, backend development, software security, server security, databases, web engineering, frontend development, JavaScript/TypeScript, Angular/React.js, 3D simulations and real-time web-based physics (Ammo.js and Rapier), WebGL and Three.js, web animations (2D and 3D), user experience research, testing and design.

School of Design Bern and Biel Bern, Switzerland
Federal Diploma in Interactive Media Design *2015 – 2017*

– **Graduated with top-class grades**, ranking among the top performers nationwide, specialising in research-driven, user-centred design methodologies for interactive applications.
– Developed a strong foundation in user experience principles and human-computer interactions, sparking an interest in the intersection of technology, human perception, and cognition — ultimately leading to my pursuit of web-based software development and, later on, brain-computer interfaces and neuroscience.

Awards

2024 **Best Technology Production**, SAE Alumni Organisation *1st place*
Awarded for my work at FinalSpark on developing a lab-grown human brain embodied in a virtual environment, which was the first vertical experiment of its kind. I am the first individual to receive the alumni award in two consecutive years.

2023 **Best Technology Production**, SAE Alumni Organisation *1st place*
Awarded for my contributions at IDUN Technologies in developing innovative Neural/Cloud Interfaces and unobtrusive brain-computer interfaces, demonstrating novel neurotechnology applications. I was the first Swiss alumni recipient of this award.

2017 **Paul Boesch Design Award**, Paul Boesch Foundation *1st place*
Awarded for my outstanding academic and design achievements in user experience research and design, recognised for my mobile application for the BEA Expo, the country's largest consumer fair, showcasing various products and services multiple various sectors. I was the youngest recipient of this annual award in 2017, demonstrating my early accomplishments in interactive media design and development.

Fellowships and Incubators

2025 **Foresight Institute Fellowship**, Foresight Institute *Active*
A one-year program providing access to leading experts and insights into transformative technologies like nanotechnology, biotechnology, neurotechnology, and AI.

2025 **UtrechtInc Bioincubator Foundership**, Utrecht Medical Center *Active*
A program providing networking, strategic guidance, and access to facilities for building and growing scalable health startups.

2025 **CEO Mastermind Accelerator**, Arben Ventures *Active*
A three-month program to develop leadership skills and expand my network in the US investment community.

2025 **Tribe 23 Boost Accelerator**, Boost VC *Upcoming*
A one-week intensive program to refine my pitch and connect with early-stage investors for a deep tech startup.

2025 **Longevity Biotech Fellowship**, LBF Org *Upcoming*
A global platform offering a network of researchers, investors, and entrepreneurs in longevity, with a 3-day in-person retreat and a 12-week online program for biotech development.

Grants

2024 **Grant**, Organisation
Description

2024 **Grant**, Organisation
Description

2024 **Grant**, Organisation
Description

Publications

Journal Papers

Jordan, F. D., Kutter, M., Comby, J., Brozzi, F., & Kurtys, E. (2024). *Open and remotely accessible Neuroplatform for research in wetware computing*. A paper exploring the design and development of a novel platform for brain-computer interface research. Frontiers in Artificial Intelligence, https://doi.org/10.3389/frai.2024.1376042 (**Burger, D.**, Minor Author)

Patents

Burger, D., Gisin, S., Bachmann, S., Thielen, M. (2022). EP4369655A1 – *System and method for secure handling of sensitive data* – A patent focused on secure data management and transmission. Google Patents. https://patents.google.com/patent/EP4369655A1

Posters and Presentations

List of posters and other presentations at conferences or seminars.

Preprints and in Progress

Burger, D., Watanabe, M., Cunha, G., & Hande, I. (In preparation, targeting 2025). *Biohybrid-first approaches to mind-uploading within the next 20 years* (Working title).

Koene, R., **Burger, D.** et al. (In preparation). *Whole brain emulation roadmap 2.0* (Contributing Author). An updated comprehensive guide to whole brain emulation, building upon the foundational work of Nick Bostrom and Anders Sandberg: http://www.fhi.ox.ac.uk/reports/2008-3.pdf

Online Publications and Essays

Burger, D. (2024). *Lab-Grown Human Brain Embodied in a Virtual World*. Daniel Burger's Substack. https://danburonline.substack.com/p/lab-grown-brain-embodied-in-vr

Burger, D. (2023). *The Influence of Brain-Computer Interfaces on the World Wide Web*. Nerd For Tech. https://medium.com/p/f93a329816cd

Other Contributions

White, E. J. B. (2024). *Book: AI Today: OI Tomorrow: The Dawn of Organoid Intelligence*. Packt Publishing. https://www.amazon.com/dp/B0D2Z24L2L (**Burger, D.**, Advisor)

Burger, D. (2023). *Middlesex University Bachelor's thesis: Enabling General Applicability for Brain-Computer Interface Software Through Cloud Computing*. ResearchGate. https://doi.org/10.13140/RG.2.2.34970.21442

Presentations

Keynotes

mm/yyyy **Keynote**, Title *Address*
mm/yyyy **Keynote**, Title *Address*

Conference Presentations

mm/yyyy **Keynote**, Title *Address*
mm/yyyy **Keynote**, Title *Address*

Panels

mm/yyyy **Keynote**, Title *Address*
mm/yyyy **Keynote**, Title *Address*

Seminars

mm/yyyy **Keynote**, Title *Address*
mm/yyyy **Keynote**, Title *Address*

Workshops

mm/yyyy **Keynote**, Title *Address*
mm/yyyy **Keynote**, Title *Address*

Poster Presentations

mm/yyyy **Keynote**, Title *Address*
mm/yyyy **Keynote**, Title *Address*

Projects

Active Projects

Augmented Progressive Brain Replacement **Eightsix Science**
Reconstruction Pipeline, Surgical Procedure, Virtual World *August 2024 – present*

– Developing a patient-specific 3D-bioprinted neural graft procedure for seamless replacement of aged, damaged, and silenced brain tissue, focusing on cognitive continuity. **This effort aims to facilitate neural regeneration/replacement and, by that, eliminate most neurodegenerative diseases.**

Ectopic Cognitive Preservation **Eightsix Science**
Brain Explantation, Perfusion System, Biohybrid Brain-Computer Interface *August 2024 – present*

– Designing technologies for long-term maintenance of a human brain outside the body using a large-scale perfusion system and simulated sensory input via a novel brain-computer interface. **This effort aims to overcome ageing as a disease, and potentially extend lifespans indefinitely.**

Previous Involvements

Neuroplatform: https://finalspark.com/neuroplatform **FinalSpark**
Neuroplatform SDK, Neuroplatform API, FinalSpark Butterfly Demo *August 2023 – October 2024*

– Co-created a cloud platform enabling real-time interaction between human brain organoids in virtual environments, showcasing their unique learning capabilities. **This research aims to enable organoid intelligence: a supercomputer running on just 20 watts with true general intelligence.**

Blue Brain Project: https://www.epfl.ch/research/domains/bluebrain **EPFL**
Blue Brain Nexus, NeuroMorphoVis, Open Brain Institute Platform *November 2023 – July 2024*

– Contributed to digital brain reconstruction and simulation, enhancing Blue Brain Nexus and developing the Open Brain Platform for accessible brain simulations. **This enables easy access to virtual wet labs, reducing animal-based experiments and accelerating neuroscientific understanding.**

IDUN Guardian: https://iduntechnologies.com/idun-guardian **IDUN Technologies**
Guardian Console, Guardian SDKs, Guardian Cloud, Guardian Dev Docs *October 2021 – July 2023*

– Co-built IDUN Technology's neurointelligence platform, converting brain signals from in-ear EEG hardware into actionable insights via a cloud-based system, companion apps, and SDKs. **This aims to democratise access to brain-computer interface technology by integrating it into everyday consumer earbuds, making the brain accessible through a secure API.**

Hexagon HxDR: https://hxdr.com **Hexagon**
HxDR Cloud, HxDR Web, HxDR Gateway, HxDR SDK *March 2021 – September 2021*

– Contributed to Hexagon's cloud-based HxDR platform for storage, visualisation, and collaboration, enabling the capture and management of high-resolution geospatial data and digital twins. **This work enables real-time simulations and management of digital reconstructions of the entire world, providing invaluable data for infrastructure planning, disaster response (e.g., flooding and storm simulations), and urban development (e.g., 5G tower placement), which were previously impossible.**

Professional Activities

Open Source Engagement

Year **Label**, Title *Address*
Description

Volunteering

2024+ **Carboncopies Foundation**, Whole-Brain Emulation Researcher
The Carboncopies Foundation is a non-profit organisation dedicated to advancing the scientific and technological foundations of whole-brain emulation. As a volunteer researcher, I contribute to investigations in whole-brain emulation, focusing on its ethical implications in collaboration with philosophers and exploring the design and technical feasibility of virtual environments for emulated or linked brains.

Advisor

2024+ **Netho Labs Ltd**, Computational Neuroscience Advisor
Netho Labs is a research company focused on merging neurotechnologies with artificial intelligence to study the brain during natural behaviours over extended periods. As a computational neuroscience advisor, I provide guidance on applying computational modelling, simulation, and analysis techniques to their research in neuroethology, particularly in the development of lo-fi whole-brain emulation paradigms.

Consulting

Academic Activities

Teaching

SAE Institute Zürich

Spring & Fall **Guest Lecturer**, Cloud Computing & Software Engineering
This course focuses on equipping students with the theoretical knowledge and practical skills to leverage modern cloud computing platforms like AWS and wrappers like Railway for software development and deployment. It covers key concepts such as microservices, containerisation with Docker, infrastructure as code (IaC), CI/CD pipelines, and database technologies. Students engage in hands-on projects and exercises using tools like GitHub Actions and object-relational mappers (ORMs) to enhance their skills in building scalable, resilient cloud-native applications.

Spring & Fall **Guest Lecturer**, Web Specials & Advanced Web Development
This course covers current trends in advanced web development. The syllabus includes monorepo management with tools like Turbo, frontend development with React, 3D graphics implementation with Three.js and React Three Fiber, API-driven development, and state-of-the-art cloud deployment strategies with tools such as AWS and Cloudflare. The goal is to provide practical knowledge and techniques used by modern engineers, demonstrated through hands-on exercises and example code workflows. The course aims to make students proficient in building robust and feature-rich web applications that are production-ready.

Conferences and Symposiums

Year **Label**, Title *Address*
Description

Year **Label**, Title *Address*
Description

Peer Reviews and Editorial Work

Year **Label**, Title *Address*
Description

Year **Label**, Title *Address*
Description

Mentoring

2022+ **Industry Expert Mentor**, Advanced and Special Software Engineering
I mentor and advise BSc students on their thesis and projects, providing guidance in areas such as code reviews, pair programming, design, and industry best practices. My role involves technical support as well as academic and research perspectives. I typically mentor up to three students per semester, selecting top-performing students working on particularly innovative projects. This includes projects focusing on full-body tracking and immersion in VR, user experience research for a neuroscience-informed mental health app, and technically complex projects like automated image pipelines for generative UI in e-commerce.

Skills and Certifications

Skills Overview

- **Programming Languages:** Python, TypeScript, JavaScript, Rust, Mojo, AssemblyScript, Wolfram
- **Web Technologies:** HTML, JSX, CSS, SCSS, XML, YAML, JSON, JSON-LD, GraphQL, WebAssembly (WASM), Web Bluetooth, WebXR, WebSockets, Progressive Web Apps (PWAs)
- **Frameworks & Libraries:**
  - *Frontend:* React.js, Next.js, Astro, Vite, Three.js, React Three Fiber, Motion, Million.js, Tauri, Capacitor.js, Expo, React Native, Tailwind CSS, shadcn/ui, Partytown, TanStack Tools, Zustand, Jotai, Framer
  - *Backend:* NestJS, FastAPI, Express, Node.js, Deno, Bun, Rocket, Socket.io, Min.io, Protobuf, TRPC, LiveBlocks, Helmet, Prisma, uvicorn, OpenAPI/Swagger, Pydantic, RxJS
  - *Machine Learning:* PyTorch, PyTorch Lightning, FastAI, LangChain, LangGraph, Llama, Gemini, GPT, NENGO, DSPY, Segment Anything, Kubeflow, Ludwig, Vercel AI SDK, HuggingFace, GraphRAG, Stable Diffusion
  - *Data Processing:* Numpy, Pandas, Polars, Matplotlib, Seaborn, Apache Spark, Apache Beam, Kafka, Prometheus, Parquet
- **Databases:** SQL, NoSQL, PostgreSQL, MongoDB, Redis, KeyDB, MySQL, AuroraDB, TimeScaleDB, ElasticSearch, pgvectorscale, Qdrant, Neo4j, SurrealDB
- **DevOps & Cloud:** Docker, Kubernetes, Terraform, Pulumi, AWS CDK, Ansible, Helm, k3s, LocalStack, AWS, DigitalOcean, Cloudflare, Railway, Vercel, OpenStack, Coolify, IPFS, SST, Lens, Nix, Docker Compose, GitHub Actions, OrbStack
- **Version Control & Package Managers:** Git, NPM, PNPM, Yarn, Cargo, Bun, Poetry, UV
- **Testing & Development Tools:** Jest, Vitest, Playwright, PyTest, Storybook, VS Code, Cursor, Zed, Replit, Codespaces, Xcode, Android Studio
- **3D & Graphics:** Blender (scripting, geometry nodes, and simulation nodes), Substance Painter, FreeCAD, Nerf Studio, gltfjsx, WGSL, Triplex, Salva, Rapier, Leva, Theatre.js, Spline, Bezi, Adobe CC (Illustrator, After Effects, Premiere Pro, Photoshop), Figma, Meshy, Rive, SuperSplat, Tinkercad
- **Scientific Computing:** Jupyter Notebook, Google Colab, Wolfram Mathematica, Octave, SymPy, NetPyNE, pyRiemann, PsychoPy, Julius, StreamLit, Apache Zeppelin
- **Markup & Documentation:** LaTeX, Markdown, MDX, Mermaid, Drawio
- **Operating Systems:** Linux (Ubuntu), macOS, Windows
- **Miscellaneous:** Ruff, Biome, Draco, Typer, Devcontainer, Remotion, Hoppscotch, Servo, Chromium

Certifications

LLM Agents with LangGraph (DeepLearning.AI) [show credential], 3D Bioprinting and Biofabrication (Utrecht University) [show credential], LLM Applications with LangChain (DataCamp) [show credential], Terraform Associate; Infrastructure as Code (HashiCorp) [show credential], 3D Web Development with Three.js (Three.js Journey) [show credential], AWS Certified Developer Associate (Amazon Web Services) [show credential], Machine Learning DevOps Engineering (Udacity) [show credential], Applied Machine Learning (Constructor Academy) [show credential], Schema-first GraphQL with Apollo (NestJS) [show credential], Advanced English C1 (Cambridge University) [show credential], Web Application and Software Architecture (Educative) [show credential], Data Structures and Algorithms (Coursera) [show credential], Node Backend Development (NestJS) [show credential], Professional Scrum Developer (Scrum.org) [show credential], Reactive Frontend Development with React.js (Udacity) [show credential], Web Design and Development (SAE Institute) [show credential]

Technical Skills

Detailed list of technical skills and tools.

Research Skills

Detailed list of research methodologies and tools.

Communication Skills

Highlights of capabilities in interpersonal and formal communication settings.

Teaching Skills

Overview of pedagogical methods and innovations (e.g. from reference letter from Sam).

Languages

- **German and Swiss German:** Native proficiency
- **English:** Full professional proficiency
- **Dutch and French:** Basic conversational proficiency
- **Latin and Bosnian:** Basic reading and writing proficiency
- **Japanese and Spanish:** Beginner

Miscellaneous

Press and Media

2024 **The Register**, *Lab-grown human brain cells drive virtual butterfly in simulation.* Link to article — *Article*
News article in The Register featuring the FinalSpark Butterfly project, based on an interview.

2024 **Tom's Hardware**, *World's first bioprocessor uses 16 human brain organoids for a million times less power consumption than a digital chip.* Link to article — *Article*
Article in Tom's Hardware about the FinalSpark Neuroplatform, achieving significant global attention with millions of views on social media and numerous inquiries.

2024 **YouTube**, *Demo showcase: Lab-Grown Human Brain Living in a Virtual World.* Link to video — *Video*
Trailer video I created and uploaded showcasing the Neuroplatform project. Achieved over 120,000 views, 1,000+ comments, and contributed to 1,000+ new subscribers on my YouTube channel.

2024 **Short Film**, *Astral Journey.* Link to trailer — *Trailer*
Sci-fi short film where I served as an advisor to the filmmaker on concepts related to consciousness, mind-uploading, and whole brain emulation. The film is currently being presented at film festivals.

2023 **YouTube**, *Explainer: What is a Neural/Cloud Interface?* Link to video — *Video*
Explainer video I scripted and created (including motion graphics) about neural/cloud interfaces, based on my research at IDUN Technologies.

Memberships

Partnerships

2024+ **Nervana**, Community Member
Active participant in a UK-based community of neurosurgeons and neurotechnologists, engaging in monthly discussions on current neurosurgery paper reviews and journal clubs.

2023+ **BCI Society**, General Member
General member of the BCI Society, an organisation dedicated to the development of brain-computer interface research.

2022+ **NeuroTechX**, Member and Advocate
Member of NeuroTechX, an organisation and community with the aim to build and advance neurotech.

Supplementary Training

2024 **3D Printing and Biofabrication**, Utrecht University — *Summer School*
Intensive summer course focused on the applications of 3D printing in biofabrication and tissue engineering at the Utrecht Medical Center.

2024 **Neuronal Dynamics by Prof. Gerstner Wulfram**, EPFL Lausanne — *Extra Lectures*
Participation in extra lectures on neuronal dynamics by Prof. Gerstner Wulfram, enhancing understanding of mathematical neuroscience.

2024 **Systems Neuroscience by Prof. Mathis Mackenzie**, EPFL Lausanne — *Extra Lectures*
Engagement with advanced concepts in systems neuroscience from Prof. Mathis Mackenzie, deepening insights into neural networks and deep learning.

2022 **Applied Machine Learning**, Constructor Academy *Online Bootcamp*
Intensive online bootcamp focused on practical machine learning techniques, covering various applications and algorithms.

2019 **Games Programming**, SAE Institute Frankfurt *Extra lectures*
Attendance of extra lectures focusing on the practicalities of programming games in game engines such as Unity 3D and Unreal Engine.

2018 **Game Design**, SAE Institute Zürich *Extra lectures*
Attendance of extra lectures focusing on game design practices with Autodesk Maya and ZBrush.

2017 **3D Design**, School of Design Bern and Biel *Evening Course*
Evening course focused on developing foundational skills in 3D design principles and software with Cinema 4D.

Services

year-now **Label**, Title *Address*
Description

Side Projects

year-year **Label**, Title *Address*
Description

Hobbies

2023+ **Online Chess**, 1200+ peak ELO *Chess.com*
I play online chess occasionally (averaging 15+ daily games) and have achieved a peak rating of over 1200 ELO on Chess.com. I also participate in some long-running games to relax my mind.