

# Richard CSAKY

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I have obtained my **PhD** at **Oxford**, where I gained expertise in collecting, analyzing, and **decoding non-invasive brain** data using novel **deep learning** approaches. My background is in robotics and computer science, along with **3 years** of applied machine learning **experience** in **computer vision** and **language processing**. I have a particular interest in **speech** BCI applications and emerging **BCI technologies**.

## EDUCATION

### PhD in Machine Learning and Neuroscience

Secured \$100,000 studentship.

Presented research at 4 international **conferences**.

Authored 2 publications on novel deep learning **methods** for modeling and **decoding brain** activity.

Designed reading and **inner speech** experiments, running 30+ **EEG**, **MEG**, **MRI**, **OPM** sessions.

Built a closed-loop EMG silent **speech interface**.

Wrote over 10,000 lines of code in Python for **data analysis**, **signal processing**, and **machine learning**.

Led 5-person team in a hackathon with a BCI idea.

University of Oxford 📍

2020 – 2023 📅

### M.S. in Computer Science Engineering

Attended courses (**BCI**, bioinformatics, neural networks) at **KU Leuven** (Belgium) for 1 semester.

Awarded the National Excellence Scholarship.

Attended **EEML** (machine learning summer school).

Presented research at 6 conferences and meetups.

Budapest University of Technology (Hungary) 📍

2018 – 2020 📅

### B.S. in Mechatronics Engineering

Implemented molecular circuit **simulation platform** in **C++**, winning 2nd place at university conference.

Budapest University of Technology (Hungary) 📍

2014 – 2018 📅

## TECHNICAL SKILLS

### Actively using

- EEG/MEG experiment design and execution
  - Signal processing
  - Machine learning
- BCI decoding
- Python
- PyTorch
- Matlab
- Git
- LaTeX

### Studied and self-taught, used in projects

- Java/Android
- C/C++/C#
- OpenGL
- TensorFlow
- Inventor, LabView, Ansys

## EXPERIENCE

### Computational Neuroscientist

Developed **machine learning** methods for analyzing and **decoding** multichannel **electrophysiology** data.

📍 Sonera (Remote)

📅 July 2023 – present (Consulting: Jul - Dec 2023)

### Technical Specialist

1. BCI startup (April 2023 – present)

Provided guidance for a **BCI** prototype, focusing on **ML algorithms** for user experience and accuracy.

2. Chatbot startup (June 2020 – August 2020)

📍 Various

📅 2020 – present

### Natural Language Processing Researcher

1. Led **dialog modelling** research, publishing a novel **data-filtering** method at **ACL**, and winning a national competition with a review of **150 papers**

2. Developed one of the **first Transformer-based chatbots**, with over 400 stars on GitHub

3. **Created** and published a new **dataset** at **EACL**

4. Developed online **GPT2 chatbot** used by 100s

5. Mentored students on NLP projects (**1**, **2**, **3**, **4**)

📍 Budapest University of Technology (Hungary)

📅 February 2018 – October 2019

### Software Engineer

Built a **UI** for real-time manipulation of parking spots on camera feed. Adapted **YOLO** for parking space **segmentation**, achieving results that led to the allocation of a dedicated team and funding.

📍 Bosch (Hungary)

📅 July 2017 – August 2018

## SOFT SKILLS

- Leadership
- Adaptable
- Problem-solving
- Cross-functional
- Communicator (**Podcast host**)