

# MAXIME BURCHI

Email: maxime.burchi@uni-wuerzburg.de

Homepage: <https://burchim.github.io/>

## RESEARCH INTERESTS

---

Deep Learning, Computer Vision, Automatic Speech Recognition (ASR), Natural Language Processing, Reinforcement Learning

## EDUCATION

---

**Würzburg University** February 2022 - present  
Ph.D. in Computer Science, advised by Prof. Radu Timofte Würzburg, Germany

**ESIEE Paris, Université Gustave Eiffel** September 2018 - July 2021  
Master of Engineering in Computer Science Noisy-le-Grand, France  
Machine Learning and Embedded Systems

**ESIEE Paris, Université Gustave Eiffel** September 2016 - June 2018  
Classes Préparatoires, Scientific Preparatory Classes Noisy-le-Grand, France

## WORK EXPERIENCE

---

**Deep Learning Intern** February 2023 - August 2023  
Nvidia, *Advised by Krishna C. Puvvada* Paris, France

- Performed research on audio-visual speech recognition.
- Creation of french ASR dataset, training and evaluation of speech recognition models.
- Developed an audio-visual ASR model for robust multilingual speech recognition.
- Submitted and presented research work at ICASSP 2024 conference.

**Research Intern, Automatic Speech Recognition (ASR)** February 2021 - July 2021  
Orange Labs, *Advised by Valentin Vielzeuf* Rennes, France

- Performed research to reduce end-to-end learning methods complexity in the area of ASR.
- Implemented, trained and evaluated state-of-the-art architectures using PyTorch.
- Developed an efficient architecture design inspired from previous works done in ASR and vision.
- Submitted research work to ASRU 2021 conference.

## PUBLICATIONS

---

Maxime Burchi, Krishna C. Puvvada, Jagadeesh Balam, Boris Ginsburg, Radu Timofte. Multilingual Audio-Visual Speech Recognition with Hybrid CTC/RNN-T Fast Conformer. ICASSP 2024, Seoul, South Korea.

Maxime Burchi, Radu Timofte. Audio-Visual Efficient Conformer for Robust Speech Recognition. WACV 2023, Waikoloa, Hawaii.

Maxime Burchi, Valentin Vielzeuf. Efficient Conformer: Progressive Downsampling and Grouped Attention for Automatic Speech Recognition. ASRU 2021, Cartagena, Colombia.

## SKILLS

---

**Software** C/C++, Python, PyTorch, TensorFlow, Java, Shell script, Git, Docker  
**Spoken Languages** French (native), English (fluent)

## SCHOOL PROJECTS

---

### **Mechanical automation of two music instruments: Pan Flute and Xylophone**

- Created a mechanical orchestra controlled by microcontroller units connected to an iOS app.
- Designed and built xylophone playing machine and prototypes.
- Developed embedded C code on TI MCUs and electrical circuit to control motors.
- Received 2019 ESIEE Paris JDP Award by Texas Instruments.

*See xylophone playing demonstration [here](#)*