Thomas COUDERT

Ph.D Student

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RESEARCH EXPERIENCE

2021-now **PhD in Physic for Life Sciences INSERM, Grenoble Institute Neurosciences (GIN)**
MRI « fingerprinting » and Artificial Intelligence for managing stroke patients.

2021 **Master Internship INSERM, Grenoble Institute Neurosciences (GIN)**
Participation in a research project for the segmentation of tumors in brain MRI in patients with glioblastoma.

2020/2021 **Deep learning and machine learning project with CEA Grenoble**
Collaborative project with a researcher from CEA Grenoble to develop a predictive model of J.H. Conway's Game of Life for biomedical purposes.

PROFESSIONAL EXPERIENCE

2021 **Master Internship Pixyl Medical**
Participation in the R&D development of the start-up Pixyl Medical. Deep-learning-based segmentation of Multiple Sclerosis Lesion in brain MRI.

2019-2020 **Student ambassador Grenoble-INP Emblem**
Representative of the Emblem Grenoble brand within the Grenoble-INP network: communication, sales, promotion, and management of the ambassador team.

EDUCATION

2021-now **PhD in Physic for Life Sciences INSERM, Grenoble Institute Neurosciences (GIN)**
MRI « fingerprinting » and Artificial Intelligence for managing stroke patients.

2018-2021 **Master in Engineering at Grenoble-INP Phelma**
3rd year: Biomedical Imaging.
2nd year: Biomedical Engineering.
1st year: Physic Electronic Telecom.

2020 **Machine Learning and Deep Learning formations**
Andrew Ng lecture, Stanford (Coursera Certifications)
Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization
Structuring Machine Learning Projects
Neural Networks and Deep Learning

2016-2018 **Preparatory Classe at La Prépa Des INP Grenoble**
Two years of intensive scientific courses to prepare at Engineering School.

TEACHING EXPERIENCE

2022 **Course: Introduction to Python**
Grenoble National Polytechnic Institute - Preparatory class.

2022 **Practical class supervision: Introduction to PCR method**
Grenoble National Polytechnic Institute - Preparatory class.

PUBLICATIONS

1. Aurélien Delphin, Fabien Boux, Clément Brossard, Thomas Coudert, Jan M Warnking, Benjamin Lemasson, Emmanuel Luc Barbier, Thomas Christen (2023). *Enhancing MR vascular Fingerprinting through realistic microvascular geometries*. **arXiv preprint arXiv:2305.17092**
2. Aurélien Delphin, Thomas Coudert, Audrey Fan, Michael E Moseley, Greg Zaharchuk, Thomas Christen (2023). *MR Vascular Fingerprinting with 3D realistic blood vessel structures and machine learning to assess oxygenation changes in human volunteers*. ISMRM, Toronto (**Poster**)
3. Thomas Coudert, Aurélien Delphin, Jan M.Warnking, Emmanuel L.Barbier, Thomas Christen (2023). *Utilisation de séquences de type MR Fingerprint bSSFP pour les mesures T2* et la quantification de l'effet BOLD*. SFRMBM Paris (**Poster**)
4. Thomas Coudert, Aurélien Delphin, Jan M.Warnking, Emmanuel L.Barbier, Thomas Christen (2023). *Réseaux de neurones profonds pour la simulation de signaux IRM pour l'IRM Fingerprint vasculaire.* IABM23 (**Poster**)
5. Thomas Coudert, Aurelien Delphin, Jan Warnking, Benjamin Lemasson, Emmanuel L Barbier, Thomas Christen (2022). *Searching for an MR Fingerprinting sequence to measure brain oxygenation without contrast agent*. ISMRM, London (**Poster**)
6. Thomas Coudert, Sophie Ancelet, Nadya Pyatigorskaya, Lucia Nichelli, Damien Ricard, Dimitri Psimaras, Marie Odile Bernier, Michel Dojat, Florence Forbes, Alan Tucholka (2021). *Contribution of Transfer Learning for automatic segmentation of radiation-induced brain lesions in glioblastoma patients from a limited number of annotated MRI*s. GDR Statistique&Santé (**Oral**)

ADDITIONAL INFORMATION

- **Computer skills**
  Programming: Python, Matlab, C, SQL
  Software: Microsoft Office; Version management: GitHub, GitLab; Imaging: ImageJ, ITKSnap; OS: Linux, Ubuntu, Windows
- **Languages**
  French (native)
  English (level C1 BULATS)
  German (level B2)
  Italian (level B1)