Hassan Ismail Fawaz, PhD

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Employment History

2022 – Now **Senior Machine Learning Researcher** Ericsson, France.
2020 – 2022 **Machine Learning Engineer** Besedo, France.
2017 – 2020 **Researcher.** IRIMAS, Université Haute Alsace, France.
2018 – 2020 **Lecturer.** ENSISA, Université Haute Alsace, France.
2017 – 2017 **Internship.** Data Services & Valorisation for Business, Orange Labs, France.
2016 – 2017 **Internship.** TICKET Lab, Université Antonine, Lebanon.
2016 – 2016 **Freelance.** Website development - www.mradmcc.com.
2015 – 2015 **Internship.** Web application development, Dar El Handasah, Lebanon.

Education

2017 – 2020 **PhD Machine Learning, Université Haute Alsace, France**
Temporal data analysis with surgical data science application.
2016 – 2017 **MSc Computer Science, Université de Bourgogne, France**
Second Class Honours. Databases & Artificial Intelligence.
2011 – 2017 **MSc Software Engineering, Université Antonine, Lebanon**
Fourth Class Honours. Software & Telecommunications Engineering.

Research Publications

Journal Articles (accepted)

1. **Ismail Fawaz, H.**, Lucas, B., Forestier, G., Pelletier, C., Schmidt, D. F., Weber, J., … Petitjean, F. (2020). InceptionTime: Finding AlexNet for Time Series Classification. *Data Mining and Knowledge Discovery*. Code is available on https://github.com/hfawaz/InceptionTime.
2. **Ismail Fawaz, H.**, Forestier, G., Weber, J., Idoumghar, L., & Muller, P.-A. (2019a, August). Accurate and interpretable evaluation of surgical skills from kinematic data using fully convolutional neural networks. *International Journal of Computer Assisted Radiology and Surgery*. Code is available on https://github.com/hfawaz/ijcars19.
3. **Ismail Fawaz, H.**, Forestier, G., Weber, J., Idoumghar, L., & Muller, P.-A. (2019b, January). Deep learning for time series classification: a review. *Data Mining and Knowledge Discovery*. Code is available on https://github.com/hfawaz/dl-4-tsc.
4. Forestier, G., Petitjean, F., Senin, P., Despinoy, F., Huaulmé, A., **Ismail Fawaz, H.**, … Jannin, P. (2018, September). Surgical motion analysis using discriminative interpretable patterns. *Artificial Intelligence in Medicine*, *91*, 3–11.

Conference Proceedings

1. Pialla, G., **Ismail Fawaz, H.**, Devanne, M., Weber, J., Idoumghar, L., Muller, P.-A., … Forestier, G. (2022). Smooth Perturbations for Time Series Adversarial Attacks. In *Pacific-Asia Conference on Knowledge Discovery and Data Mining*. Code is available on https://github.com/Gpialla/SmoothPerturbationsTSAA.

2. Mathis, F., **Ismail Fawaz, H.**, & Khamis, M. (2020). Knowledge-driven Biometric Authentication in Virtual Reality. In *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems Extended Abstracts*.

3. Rakhshani, H., **Ismail Fawaz, H.**, Idoumghar, L., Forestier, G., Lepagnot, J., Weber, J., … Muller, P.-A. (2020). Neural architecture search for time series classification. In *IEEE International Joint Conference on Neural Networks*.

4. **Ismail Fawaz, H.**, Forestier, G., Weber, J., Petitjean, F., Idoumghar, L., & Muller, P.-A. (2019). Automatic alignment of surgical videos using kinematic data. In *Artificial Intelligence in Medicine*. Acceptance rate is **21%**. Code is available on `https://github.com/hfawaz/aime19`.

5. **Ismail Fawaz, H.**, Forestier, G., Weber, J., Idoumghar, L., & Muller, P.-A. (2019c). Deep Neural Network Ensembles for Time Series Classification. In *IEEE International Joint Conference on Neural Networks*. Code is available on `https://github.com/hfawaz/ijcnn19ensemble`.

6. **Ismail Fawaz, H.**, Forestier, G., Weber, J., Idoumghar, L., & Muller, P.-A. (2019d). Adversarial Attacks on Deep Neural Networks for Time Series Classification. In *IEEE International Joint Conference on Neural Networks*. Code is available on `https://github.com/hfawaz/ijcnn19attacks`.

7. **Ismail Fawaz, H.**, Forestier, G., Weber, J., Idoumghar, L., & Muller, P.-A. (2018a). Evaluating surgical skills from kinematic data using convolutional neural networks. In *Medical Image Computing and Computer Assisted Intervention*. (Oral selection rate **4%**). Code is available on `https://github.com/hfawaz/miccai18`.

8. **Ismail Fawaz, H.**, Forestier, G., Weber, J., Idoumghar, L., & Muller, P.-A. (2018c). Transfer learning for time series classification. In *IEEE International Conference On Big Data*. Selection rate **18.9%**. Code is available on `https://github.com/hfawaz/bigdata18`.

Workshops

1. **Ismail Fawaz, H.**, Forestier, G., Weber, J., Idoumghar, L., & Muller, P.-A. (2018b). Data augmentation using synthetic data for time series classification with deep residual networks. Code is available on `https://github.com/hfawaz/aaltd18`.

Miscellaneous Experience

Visiting researcher

2019 **Monash University**. One month visiting François Petitjean.
- **Google Brain**. One day visiting Neil Zeghidour.
- **Sorbonne University**. One day visiting Jean-Yves Franceschi.
- **Open University of The Netherlands**. One day visiting Daniele Di Mitri.

2018 **Wayne State University**. One day visiting Abhilash Pandya.

Grants

2019 **Mésocentre of Strasbourg**. 1.6 million GPU computing hours.

2018 **Mésocentre of Strasbourg**. 1.6 million GPU computing hours.

2017 **NVIDIA Corporation GPU Grant**. Quadro P6000.
- **Coursera Financial Aid**. Deep learning speciality.

Miscellaneous Experience (continued)

Certifications

2019 **Participation**. International Workshop on Machine Learning & Artificial Intelligence.
Participation. PRAIRIE Artificial Intelligence Summer School.
Participation. Learning from Data Streams and Time Series.
Participation. International Conference on Computer Assisted Radiology & Surgery.
2018 **Volunteering**. IEEE International conference on Big Data.
Participation. International Summer School on Deep Learning.
2017 **Participation**. Cisco CCNA 1, 2, 3 & 4.
2016 **Participation**. Lebanese Collegiate Programming Contest.
Participation. Advanced Programming & Algorithms Boot Camp.
2015 **Participation**. Lebanese Collegiate Programming Contest.

Awards

2018 **IEEE International Conference on Big Data**. Student Travel Award.
2016 **First place**. Université Antonine Programming Competition.
2015 **Second place**. Université Antonine Programming Competition.

Talks & presentations

2019 **TsDays**. Apprentissage par transfert pour la classification de séries temporelles.
2018 **French society of computer science**. What to do with your PhD?
GDR-MADICS. Interpretable evaluation of surgical skills.

Teaching

2019 **Web programming**. Engineering students in Computer Science - 24 hours.
2018 **Deep Learning**. M.Sc. students in Computer Science - 20 hours.

Workshop committee

2019 **AALTD**. ECML/PKDD Workshop on Advanced Analytics & Learning on Temporal Data.
OR. MICCAI Workshop on OR 2.0 Context-Aware Operating Theaters.

Reviewer

2020 **ECAI**. European Conference on Artificial Intelligence.
2019 **NEUNET**. Neural Networks.
IEEE TKDE. IEEE Transactions of Knowledge and Data Engineering.
IEEE JBHI. Journal of Biomedical and Health Informatics.
MICCAI. Medical Image Computing and Computer Assisted Intervention.
IEEE/CAA JAS. Journal of Automatica Sinica.
AIRE. Artificial Intelligence Review.

Open Source Projects

2021 **HuggingFace**. Contributing to the open source HuggingFace Datasets library.

Miscellaneous Experience (continued)

2020 **Keras.io**. The first Keras tutorial on deep learning for time series classification.

2019 **sktime-dl**. An extension package for deep learning with Keras for sktime.