

Anderson AUGUSMA | Ph.D. in Applied Mathematics and Computer Science; Multimodal Perception

Grenoble, France

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Education

Université Grenoble Alpes <i>Ph.D. Candidate</i> Research areas: Multimodal Perception, Audio Modeling, and Privacy-safe Analysis. Supervisors: Prof. Dominique Vaufreydaz, Dr. Frédérique Letué.	Grenoble, France 2021–Present
Université Claude Bernard Lyon1 (UCBL) <i>M.Sc. Econometrics & Statistics (Specialization in IT Security & Risk)</i>	Lyon, France 2019–2021
○ Thesis: An introduction to machine learning, application to auto insurance claim prediction	
Université d'Etat d'Haïti (UEH), Collaboration with Université de Poitiers (France) <i>M.Sc. Fundamental and Applied Mathematics</i>	Port-au-Prince, Haïti 2017–2019
○ Optimization Thesis: Expediting the transition from non-renewable energy to renewable energy via optimal control (H. Maurer, 2017)	
○ Partial Differential Equation Thesis: Resolution of the wave equation in \mathbf{R}^n	
Université d'Etat d'Haïti (UEH) <i>B.Sc. Fundamental Mathematics</i>	Port-au-Prince, Haïti 2013–2017

Research Experience

Université Grenoble Alpes, Computer-Lab (LIG) <i>Ph.D. Candidate</i>	Grenoble, France 2021–Present
○ Conducting advanced research in multimodal perception in-the-wild, with a focus on group emotion recognition.	
○ Developed a novel approach for group-level emotion classification in-the-wild using synthetic video as data augmentation with a ViT-L backbone, achieving a 20% improvement in prediction accuracy.	

- Published in top-tier conferences, including ICMI and INTERSPEECH.
- **Current Project:** Developing a multi-task learning framework using a Variational Multi-Decoders (VEMD) to enhance latent space representations for emotion recognition, integrating body pose detection and facial expression analysis as auxiliary tasks to improve robustness and accuracy in real-world scenarios.

Publications

- **INTERSPEECH 2024**, Leang, S., **Augusma, A.**, Castelli, E., Letué, F., Sam, S., Vaufreydaz, D. "Exploring VQ-VAE for Prosody Parameters Anonymization", Voice Privacy Challenge 2024 at INTERSPEECH 2024, Sep 2024.
- **ACM ICMI 2023**, **Augusma, A.**, Vaufreydaz, D., Letué F., "Multimodal Group Emotion Recognition In-the-wild Using Privacy-Compliant Features," International Conference on Multimodal Interaction, 2023. doi: 10.1145/3577190.3616546.
- **IEEE ACII 2022**, **Augusma, A.**, "Multimodal Perception and Statistical Modeling of Pedagogical Classroom Events Using a Privacy-safe Non-individual Approach," International Conference on Affective Computing and Intelligent Interaction Workshops and Demos (ACIIW), Nara, Japan, 2022, pp. 1–5, doi:10.1109/ACIIW57231.2022.10086029.

Internships

LAMES, Gustave Eiffel University <i>Data Science Intern</i>	Nantes, France May–Oct 2021
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- Predicted and evaluated road-pavement failure modes from degradation signals and KPI relationships using machine-learning models.
 - Built data pipelines and performed image-based analysis to support model development and validation. statistical and ML techniques.
- INSAVALOR/PROVADEMS** Lyon, France
Jun–Aug 2020
Data Analyst Intern
- Performed data analysis and statistical modeling to characterize household-waste streams and derive operational insights.

Languages

Fluent: French, English (Full Professional Proficiency)

Native: Haitian Creole

Technical Skills

Programming Languages: Python, R, SQL, C, PHP, HTML

Machine Learning & Deep Learning: PyTorch, TensorFlow/Keras, Scikit-Learn, CNNs, Transformers, VAE/VQ-VAE, Object Detection, Pose Detection, Instance Segmentation

Operating Systems & Tools: Unix/Linux (shell), Windows, Git

Other: TeX/LaTeX, Microsoft Office Suite

Awards & Honors

2023: Winner of Emotion Recognition in the Wild Challenge (EmotiW), ACM ICMI 2023

2020: Eiffel Excellence French Scholarship Government Excellence Grant, MASTER-EIFFEL LAUREATS 2020 program, Campus-France.

2018: Mathematics Excellence Grant, Université d'État d'Haïti

Conference and Talks

INTERSPEECH 2024

Speaker and author in Voice Privacy Challenge

Kos, Greece

Sep 2024

International Conference on Multimodal Interaction (ICMI)

Speaker and author in ICMI/EmotiW

Paris, France

Oct, 2023

Université de Lorraine

Invited Speaker at PhD Seminar

Metz, France

Feb, 2023

International Conference on Affective Computing & Intelligent Interaction (ACII)

Speaker and author in Doctoral Consortium (DC), (Remote participation)

Nara, Japan

Oct, 2022

EIAH 2022

Participant

Leysin, Switzerland

Nov 2022

ECML PKDD 2022

Participant

Grenoble, France

Sep 2022

Hobbies and Community Involvement

Hobbies: Music, Hiking

Community Services: Volunteer as trumpet player in the Orchestre du Campus de Grenoble (OCG), 2023, Grenoble, France.