

Williams Maikol Bouzid

Information Engineering | Computer Vision | Signal Processing | Control Systems | Embedded Systems

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Mobility: Italy, France, International

Available from October 2026

Profile

Master's student in Complex Systems Engineering (VISTA) at Université de Toulon, specializing in computer vision, signal processing, Bayesian estimation, control systems, embedded systems, and scientific computing.

Currently conducting an Erasmus+ research internship at the University of Genoa (DITEN) on biomechanical modelling and Motion-Induced Interruptions (MII) in naval environments using numerical simulation, control modelling, and statistical validation.

Strong engineering profile focused on system modelling, estimation, control design, signal processing, and embedded implementation.

Education

MSc Complex Systems Engineering (VISTA)

2024 – 2026 (Expected: Sept 2026)

Université de Toulon, France

BSc Engineering Sciences

2021 – 2024

Université de Toulon, France

Scientific High School Diploma

2021

Parma, Italy

Certifications

- French: TCF (CEFR B2) – Université de Toulon (2022)
- English: C1 EF SET Certified (Reading & Listening)

Research Experience

Erasmus+ Research Internship – University of Genoa (DITEN)

Feb 2026 – Aug 2026

- Biomechanical modelling for Motion-Induced Interruptions (MII)
- Comparison of analytical RAO models with numerical simulation approaches
- MATLAB/Simulink, Python scientific stack, OpenSim implementation
- Statistical calibration, parameter estimation and validation
- Supervisor: Giuliano Vernengo – giuliano.vernengo@unige.it

Selected Academic Projects

3D Vision: Camera Calibration and 3D Reconstruction

2025 – 2026

- Normalised DLT, SVD-based decomposition of projection matrix (K, R, t)
- Fundamental matrix estimation using RANSAC
- 3D triangulation and reprojection error analysis
- Validation of geometric consistency between models
- Supervisor: Frédéric Bouchara

Industrial and Multispectral Image Processing

2025 – 2026

- Python/OpenCV and MATLAB pipelines for object counting and classification
- NDVI analysis, underwater image classification (Euclidean / SAM)
- Feature extraction: histogram, geometric and color descriptors
- GUI-based MATLAB tools for image analysis
- Supervisor: Audrey Minghelli

Statistical Signal Processing and Detection Theory

2025 – 2026

- FASC algorithms and covariance matrix estimation
- Neyman-Pearson detection theory and ROC analysis
- Monte Carlo simulations for performance evaluation
- Optimal filtering in colored noise environments
- Supervisor: Bruno Borloz – borloz@univ-tln.fr

Embedded Systems and Sensor Interfacing

2024 – 2025

- ATmega328 and Raspberry Pi programming (C / embedded Linux)
- Implementation of R-2R DAC, PWM sine generation
- I2C, SPI, UART, GPIO, ADC/DAC interfacing
- IMU acquisition (MPU6050) and low-level sensor fusion

Robotics and Control Systems

2023 – 2025

- Quadcopter: IMU fusion (MPU9250), Kalman filtering, PID tuning
- Robust attitude estimation under noise and disturbances
- State-space modelling, observability/controllability analysis
- Fuzzy logic and trajectory control for robotic systems

Diabetes and Human-System Interaction Study

2024 – 2025

- Study of type 1 diabetes impact on daily routines and academic life
- Behavioral adaptation and chronic condition management analysis

Multivariable Control System (MATLAB/Simulink)

2024 – 2025

- State-space modelling and system linearization
- LQR optimal control (Riccati equation)
- Stability analysis (Lyapunov methods)
- Controllability and system identification
- Supervisor: Jean-François Balmat

Technical Skills

Programming: MATLAB (Advanced), Python (Intermediate), C (Basic)

Signal Processing / Vision: OpenCV, Kalman filtering, Bayesian estimation, detection theory

Control Systems: PID, LQR, state-space modelling, system identification

Embedded Systems: Raspberry Pi, STM32/ATmega, Simulink, LTspice, Vivado, OpenSim

Languages

- Italian: Native
- French: B2 (TCF 2022)
- English: C1 EF SET Certified
- Spanish: B1

Professional Experience

French Tutor (Private)

2026 – Present

- Private French tutoring (grammar and communication)
- Reference: Luca Catalano – lucacatalano1991@hotmail.it

Five Seas Hotel (Cannes)

Jun 2023 – Aug 2023

- Luxury hospitality operations and quality control
- Reference: Elisa Torchy Bozzolan – torchy.elisa@gmail.com

Hotel MGallery (Cannes)

Jul 2025 – Aug 2025

- Operational support in high-end hospitality environment
- Reference: Iris Bertin – Iris.BERTIN@accor.com

- High-volume food service operations near Palais des Festivals
- Reference: Madleen Ivars – ivarsmadleen@yahoo.fr

References

Université de Toulon

- Frédéric Bouchara – Associate Professor, UFR Sciences et Techniques, Université de Toulon – bouchara@univ-tln.fr
- Gilles Chabriel – Associate Professor, UFR Sciences et Techniques, Université de Toulon – chabriel@univ-tln.fr

Signal Processing / Detection / Filtering

- Bruno Borloz – Associate Professor, Université de Toulon – borloz@univ-tln.fr
 - Course supervision: SONAR systems and statistical signal processing
 - Grade achieved: 18/20 in SONAR and detection theory
 - Topics: detection theory, ROC analysis, statistical signal processing
- Bernard Xerri – Professor, Université de Toulon – bernard.xerri@univ-tln.fr
 - Course supervision: Optimal Filtering (signal processing)
 - Grade achieved: 17.5/20 in Optimal Filtering
 - Topics: Wiener filtering, Kalman filtering, stochastic estimation, spectral analysis

Program Directors

- Jean-François Balmat – Associate Professor, Head of ISC/VISTA Master (M1 coordinator), Université de Toulon – jean-francois.balmat@univ-tln.fr
- Antoine Roueff – Professor, Head of ISC Master (M2 coordinator), Université de Toulon – roueff@univ-tln.fr

Academic Recommendation – Jean-Marc Lopez (DGA / Université de Toulon)

Doctor Engineer, Direction Générale de l'Armement (DGA)

- Supervised during ISC/VISTA Master in Radar Signal Processing.
- Full attendance and strong independent study performance.
- Grade: 17.3/20 (ranked 3rd / 25 students).
- Strong recommendation for research and engineering roles.

Academic Recommendation – Eric Spano (Université de Toulon)

Associate Professor, Université de Toulon

- Supervised during BSc Engineering Sciences (L1–L3): physics, electronics, electromagnetism, transmission lines.
- Highlighted consistency, motivation, and strong academic curiosity.
- Grade: 16.5/20 in Transmission and Impedance Matching (2nd in class).
- Confirmed strong capability for Master's-level studies and engineering careers.

Program Secretariat

- Cedric Le Pennec – cedric.le-pennec@univ-tln.fr