Ali Chimoun Pouamou Foyet

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EDUCATION

The University of Texas at Austin

Bachelor of Science, Double Major Aerospace Engineering & Mathematics   **Graduating May 2027**
   Certificates in Computational Science & Engineering, German

Overall GPA: **3.91**/4.00

RESEARCH

Controls and Learning for Autonomous Robotics Lab, Dr. David Fridovich-Keil   **Apr 2025 – Present**
The Oden Institute for Computational Engineering and Sciences

- ***Occlusion-Aware Motion Planning*** *(pending)*
  - Working on a game-theoretic motion planner interleaving feedback and open-loop information structures to deal with occlusions in the horizon.
- ***Research Experience for Undergraduates Summer 2025*** *| ROS1, JAX, Python*
  - Wrote a PID controller in Python for motion planning, working on Nvidia JetRacers.
  - Tested and fine-tuned an iLQR implementation in JAX on the JetRacers for more robust control

PHO-ICES Research Group, Dr Tan Bui-Thanh   **Jan 2025 – Apr 2025**
The Oden Institute for Computational Engineering and Sciences

- ***Undergraduate Research Assistant Spring 2025: Vision Transformers for Masked Autoencoders (MAEs)*** *| JAX*
  - Implemented a JAX version of a Masked Autoencoder for image reconstruction using Transformers as encoder and decoder

INTERESTING CLASSWORK

Probability, Intro to Stochastic Processes, Intro to Mathematical Statistics

Engineering Computation | *Mainly Python, NumPy and SciPy*

- ***Numerical Methods for Applied Mathematics:*** Jacobi and Gauss-Seidel linear solvers, Runge-Kutta 4 and Euler ODE solvers

Spacecraft Dynamics | *MATLAB*

- ***Numerical Solution to the Kepler Problem:*** Given a satellite's initial position and velocity, its trajectory is propagated in time for a given duration
- ***Satellite Ground Track Toolkit:*** Creates a view of a satellite's orbit for an observer on the Earth based on its Classical Orbit Elements

STUDENT ORGANIZATIONS

Texas Aerial Robotics (TAR), *Hardware Team*   **May 2024 – April 2025**
- ***Automatic Detection & Firing Capable Drone***
  - Worked extensively on prototyping using Autodesk Fusion 360 for an autonomous drone.

IEEE Robotics and Automation Society (RAS)   **January 2025 – April 2025**
- ***UT Robomaster,*** *Firmware Team*
  - Embedded programming for robots' attitude competing in the North America Robomaster competition.

SKILLS

Programming: Python, ROS, MATLAB
Software: Git, Jupyter, Simulink, Fusion 360, SolidWorks, Maple, Overleaf
Languages: French | *Native*   English | Fluent   German | *Advanced (B2)*

VOLUNTEERING

University Catholic Center
- ***Order of Christian Initiation for Adults (OCIA) Table leader***
  - Serving as a resource, support, and small group discussion leader for fellow college students and other adults undertaking the steps leading up to initiation into the Catholic faith.