Caroline PASCAL

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Curious and enthusiastic graduated engineer with a great eagerness to learn new skills and a genuine interest in multidisciplinary mechatronics projects. MSc recipient from the Ecole des Ponts ParisTech with a second-year specialization in the Robotics and Embedded Systems department at ENSTA.

Currently pursuing a PhD thesis on the edge between robotics and mechanics at ENSTA Paris.

Work Experience

NOVEMBER 2021 – OCTOBER 2021 › **U2IS & UME – ENSTA PARIS** › *PHD STUDENT, PALAISEAU (92)*

› **PhD thesis - "Robotized measurements: autonomous geometric and vibro-acoustic characterization of structures"**

→ Currently developing a fully autonomous robotic setup for geometric and vibro-acoustic characterization of structures.

JANUARY 2021 – OCTOBER 2021 › **U2IS & UME – ENSTA PARIS** › *RESEARCH ENGINEER, PALAISEAU (92)*

› **Development of a user-friendly interface for the integration of various sensors in the use of the use of a robotic arm**

→ Developed an intuitive ROS library and designed ergonomic tool-holding devices for the simplified implementation of geometric and vibro-acoustic measurement routines.

MAY 2019 – NOVEMBER 2020 › **U2IS & CEA-LIST** › *END-OF-STUDIES INTERNSHIP, PALAISEAU (92)*

› **Development of an object-centered grasp analysis and synthesis framework – Application to multi-fingered grippers**

→ Conceived a set of configurable task-oriented grasp quality metrics and formulated a state-of-the art hybrid friction-adhesion contact mode, which were successfully combined in a custom optimized gripper design aid tool.

JANUARY 2019 – JUNE 2019 › **BALYO SA** › *FUNCTION DEVELOPMENT INTERNSHIP – ROBOT CONTROL, IVRY SUR SEINE (94)*

› **Development of an automated optimized-trajectory generation process for autonomous forklifts**

→ Designed an innovative forklift trajectory generation process allowing the vehicle to perform turns while avoiding collisions.

JUNE 2018 – DECEMBER 2018 › **NAVIER LABORATOTRY** › *RESEARCH INTERNSHIP IN ROBOTICS, CHAMPS SUR MARNE (77)*

› **Force and torque sensors integration in the use of 6-axis robots**

→ Assisted the development of a C# sensor network aiming to facilitate the integration of sensors in the use of 6-axis robots.

Education

SEPTEMBER 2019 – TODAY › **ENSTA PARIS** › *PALAISEAU (91)*

› **Final MSc year** – Robotics and Embedded Systems Dept. – *Embedded Software, Perception, Modeling and Simulation, Control.*

SEPTEMBER 2016 – MAY 2018 › **ECOLE DES PONTS PARISTECH** › *CHAMPS SUR MARNE (77)*

› **First MSc year** – Mechanical and Materials Engineering Dept. – *CFAO, Mechanics of Solids and Fluids, Structural Dynamics, FEA.*

Skills

ANGLAIS › C1 Level (Proficient)

ALLEMAND › B1 Level (Lower intermediate)

PROGRAMMING › C++ - **Python** - C - C#
› **ROS** (Moveit! – Rviz – Gazebo)

SOFTWARE › **CFAO** - CATIA V5, Rhinoceros 3D, Grasshopper, Inventor
› **Prototyping** - 3D Printing (Ultimaker Cura) Laser Cutting, Digital machining
› **Robot control** - RobotStudio & Rapid (ABB)

Activities & Interests

LEADERSHIP EXPERIENCE

› **Student Representative (2019-2020 & 2022-2023)**
Represented the students' interests before the Education and Research Council at Ecole des Ponts ParisTech and the Board of Directors at ENSTA Paris.

› **Computer Club President (2018-2019)**
Managed a ten-person team, organized training courses, provided technical assistance.

› **Leader of Volunteer Tutoring Group (2018 -2019)**

INTERESTS › Aeronautics - Former licensed pilot
› Video Games & New Technologies