Gwendal Crequer

November 6, 1998

Graduate - robotics
- mechatronics

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🌐 github in

Languages

🇫🇷	French	*Native*
🇬🇧	English	*Technical (10 month abroad)*
🇪🇸	Spanish	*Basics*

Hard Skills

🚗🚤 driving & boating licence

💻 **Software**

🔺	MatLab	*Simscape, Stateflow, Control...*
⬡	Comsol	*Multiphysics modelling...*
🧭	TopSolid	*CAM - 5 axis machines...*
SW	SolidWorks	*Designing*
⬢	Gazebo/Ignition	*school projects*
🐦	CoppeliaSim	*school projects*
🌐	StoneFish	*Learning*

`</>` **Programming**

🐍	Python	*IA, robotics, modelling...*
🔺	MatLab	*Image, data, signal...*
©	C/C++	*ViSP, libPeR, embedded, IA...*
⬤	Julia	*Vision, data, modelling*
▣	VHDL	*Simple projects*
⣿	ROS1 & 2	*Various projects*
🐧	Debian & git	*Everyday work*

⚡ Accredited B1V at ENS Rennes

🔋 **Equipment**

ESP, Atmega, PIC, field protocols, Raspberry, PLL, filters, power converters, INS, IMU, Lidar, GNSS (RTK), electrical machines, machining, additive manufacturing...

Soft Skills

🌐 International Teamwork

⚙️ Scientific and technical versatility

🔧 Articulation thinking

Activities

📷 Amateur photography

🏄 Windsurf & Kin-ball

⚗️ Personal research projects

Research Experience

Apr – Sept 2024	**Research Assistant** ⧉ JRL-AIST - Japan	
	Impact of masking on self-perception in the 360° Visual Servoing.	
	Python, C++, ROS, Mujoco, OpenCV, ViSP, libPeR, 360° cameras	
May – Sept 2023	**Intern - Laser scanner** ⧉ CMMS - Colorado State University, USA	
	real-time laser scanning during a fiber printing process.	
	Julia, OpenCV, Image Processing, 3D reconstruction, Data representation	
May – Aug 2021	**Intern - Vision for detection and localisation** ENSTA Bretagne, France	
	Visual localisation of a robot by detecting a distribution of buoys.	
	Python, OpenCV, Interval Analysis, codac, robust state-estimation	
	Intern - Visual estimation of a cable shape	
	3D estimation of a cable for a ROV, 2 cameras without stereo matching.	
	Python, stereo-vision, basics in differential geometry	
May – July 2020 (remotely)	**Intern - Celtic chariot** CNAM, France	
	Finite Elements and analytical study of Gaulish chariot.	
	Comsol (Finite Elements), Continuum mechanics, Mediation, Synthesis	

Other Valuable Experience

Oct – Nov 2024	**Sessional Lecturer - Programming (28h)** ENSTA Bretagne, France
	Lectures + Practicals - python programming for international students.
	Organization, Autonomy, Adaptability, Patience, Cross-cultural skills

Education

Sept 2019 – Sept 2024	⧉ **Magister of Mechatronics** ⧉ ENS Rennes, France
	MSc - ISC - Teaching Track (spec. Computer Engineering)
	BScs - ISC - Engineering Sciences
	- ISC - Electrical Engineering
	Additional training projects.
	Notable projects : • Particle Swarm optimization for glass properties estimation,
	• Acoustic levitation for research on OAM and BSc practicals.
Sept 2022 – Sept 2024	⧉ **Engineering diploma + MSc. ISC** ⧉ ENSTA Bretagne, France
	(spec. Mobile Robotics)
	Notable projects : • Design, prototype, navigation of a hydrofoil motorised kayak,
	• Guidance, planning for little autonomous ships ($2\times$ 1 week).

Other projects

Oct 2021 – Apr 2023	**Scopython project** Peritell, Rennes, France
	Mentoring students in Arts : design/programming a video-jukebox.
	Teaching skills, Mentoring, cultural mediation, GUI, python
Oct 2020 – Sept 2021	**Sciences 2024** ENS Rennes, France
	MoCap, musculoskeletal modeling for performance study of an athlet.
	Matlab, Motion Capture, Dynamics, musculoskeletical models
Current interests	Manual, high-frequency fusion of IMU and GNSS data, intermittent communication and RTK data transmission using LoRa,
	Projection of robotic singularities and high-level constraints onto sliding manifolds for dynamic adaptation of guidance laws,
	Development of intelligent, cost-effective mechatronic robots with advanced control capabilities, for highly-sophisticated use in educational settings.