

Christophe Castella

MECHANICAL ENGINEER | PRODUCT DEVELOPMENT & IN-HOUSE RAPID PROTOTYPING

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PROFILE

Independent mechanical engineer with hands-on experience taking multidisciplinary products from concept and CAD through prototyping, verification and industrialization. Strong background in plastics, injection moulding, mechanisms, additive manufacturing and technical documentation, with recent experience in regulated medical-device and immunodiagnostic development environments.

PRODUCT DEVELOPMENT	ENGINEERING	INDUSTRIALIZATION
Concept • mechanisms • DFM/DFA	3D CAD • drawings • BOM • FEM	Prototypes • suppliers • testing

PROFESSIONAL EXPERIENCE

2023–Present | UNIFIED-ENGINEERING · Seedorf, Switzerland

Founder & Independent Mechanical Engineer

- Provide end-to-end mechanical engineering support, from concept development and CAD to in-house rapid prototyping, functional testing and industrialization.
- Operate in-house FDM and high-resolution DLP additive manufacturing capabilities, enabling fast production of functional prototypes, test parts, fixtures and iterative design improvements.
- Translate functional needs into manufacturable assemblies, drawings, tolerances, bills of materials and supplier-ready technical packages.

SELECTED CONSULTING ENGAGEMENTS

2026–Present | AMARASTESIA SA · Jura, Switzerland

Mechanical Product Development Engineer — Consultant

- Develop and industrialize a minimally invasive medical device, including polymer and metallic components and delivery mechanisms.
- Create product requirements, design outputs and traceability documentation.
- Coordinate prototypes, mechanical testing and suppliers for injection moulding, additive manufacturing, sterile packaging and sterilization.

2023–Present | ELIONOVA AG · Fribourg, Switzerland

External Mechanical Development Engineer

- Delivered three successive generations of a rapid, real-time immunodiagnostic platform, from initial concepts through integrated functional prototypes.
- Designed housings, mechanisms, optical integration features and manufacturable components; produced CAD assemblies, manufacturing drawings and iterative prototypes.
- Coordinated multidisciplinary development across mechanical engineering, electronics, software, biotechnology and optics to ensure effective system integration.
- Managed component sourcing, prototype production, assembly, packaging and sterilization activities, supporting the transition toward a robust and scalable product architecture.
- Designed and developed the company website and created technical and visual product content.

PROFESSIONAL EXPERIENCE — CONTINUED

2021–2023 | INSTITUTE FOR APPLIED PLASTICS RESEARCH · Fribourg, Switzerland

Mechanical Engineer

- Designed injection-moulded parts and tooling; performed advanced mould-filling simulations and developed components using polymer and ceramic materials.
- Managed development projects and produced advanced CAD designs for research and industrial partners.

EDUCATION & QUALIFICATIONS

2018–2021 | SCHOOL OF ARCHITECTURE AND ENGINEERING · Fribourg, Switzerland

BSc in Mechanical Engineering — overall average 5.2/6

- Specialization: plastics processing and lightweight structures; elective studies in technology and innovation management.
- Eurobot 2020: mechanical team lead and multidisciplinary group coordination.

2017–2018 | CENTRE PROFESSIONNEL DU NORD VAUDOIS · Yverdon-les-Bains, Switzerland

Technical bridge programme

- Award for best automatic-control project.

2012–2014 | CENTRE FOR YOUNG PROFESSIONALS IN BANKING · Lausanne, Switzerland

Swiss Bankers Association Diploma

2010–2012 | COMMERCIAL TRAINING FOR MATURE STUDENTS · Geneva, Switzerland

Management and Administration Assistant Diploma

TECHNICAL SKILLS

In-house rapid prototyping: FDM and high-resolution DLP 3D printing, prototype preparation, post-processing, assembly and functional testing.

CAD & engineering: Fusion 360, Autodesk Inventor, Siemens NX, Moldflow, TMflow (OMRON), mechanical calculations and FEM simulation

Product development: Mechanisms, complex assemblies, tolerancing, manufacturing drawings, BOMs, DFM/DFA and supplier coordination

Manufacturing: Injection moulding, FDM, SLA/DLP, MJF and metal additive manufacturing, prototyping and functional testing

Materials: Engineering polymers, composites, ceramics, metals, elastomers

Regulated development: ISO 13485 design controls, verification planning and technical documentation

Programming & automation: Python, Arduino, MATLAB, Amesim and six-axis robot programming

EARLIER PROFESSIONAL EXPERIENCE

2015–2017 — Banque Raiffeisen de la Riviera: Client advisory, sales, agency support and portfolio management

2014–2015 — Banque Cantonale Vaudoise: Banking advisor

2012–2014 — Credit Suisse: Rotations in private and wealth management, credit risk and mortgage services

2011 — Banque Cantonale de Genève: Seven-month internship in client services and statistical analysis

2010 — Swiss Armed Forces: Senior NCO school (Fourier): organisation, communication and conflict management

LANGUAGES

French Native

German C1

English B2 · BEC Vantage

Russian A1

INTERESTS

Model making and painting • additive manufacturing • electronics and programming • archery • karate