

# Bishoy Labib

Linz, Austria | Labib.Bishoy@outlook.com | +43 676 6610960 | Portfolio | [linkedin.com/in/bishoy-labib](https://linkedin.com/in/bishoy-labib)

## Summary

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Engineer with a multidisciplinary background in mechanical systems, metrology, and advanced manufacturing. Experienced in precision measurement, 3D scanning, and quality assurance across automotive and electronics industries. Passionate about research and development, automation, and data-driven approaches to industrial innovation. Holds a valid Category B driving license.

## Education

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**IT:U Austria.** MSc. in Interdisciplinary Computing - Future Industries Oct 2025 – Current

- **Coursework:** Software Development, Data Engineering, ML, Computational & Design Thinking.

**ELTE Budapest Summer University, Hungary.** 5 ECTS. in the non-Verbal brain Jul 2025 (2 weeks)

**Eötvös Loránd University, Hungary.** BSc. in Mechanical Engineering Sep 2021 – May 2025

- GPA: 4.61/5.0

## Experience

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**Mechanical and Metrology Engineer,** ZALNER Engineering Kft. – Hungary Sep 2024 – Sep 2025

- Developed complex metrology and quality control procedures for automotive and injection molding industries.
- Programmed and operated tactile and optical measurement systems - including CMMs, VMMs, tool presetters, industrial 3D scanners, and robotic arms - for precision inspection, calibration, and reverse engineering.
- Managed assembly, installation, calibration, and preventive maintenance of precision measuring equipment; provided product demonstrations, user training, and technical support to clients.
- Inspected and maintained custom jigs, gauges, and fixtures for production and quality control.
- Applied advanced GD&T principles in measurement planning, reporting, and process optimization.
- Manufactured precision mechanical components using milling and turning machines.

**Tool Presetter Retrofit Training,** Heilig & Schwab GmbH – Germany Mar 2025 (Training)

- Completed specialized training in tool presetter retrofit and calibration procedures.
- Qualified to provide retrofit and training services for precision tool presetters to customers.

**Mechanical Intern,** Mobilinter Kft. – Hungary Feb 2024 – Nov 2024

- Conducted bachelor's thesis research on the **Optimization of Medical Device Manufacturing Technology.**
- Designed a custom fixturing system for 5-axis CNC machining of orthodontic pliers.
- Interpreted technical drawings and applied advanced GD&T principles in the analysis of forged and machined components.
- Performed deformation analysis of clamped workpieces using CMM measurements, and CAD/CAM modeling.

## Technologies

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**Programming:** Python, Object Oriented Programming (OOP), Data Engineering, Pandas, NumPy, TensorFlow, Artificial Intelligence (AI), Machine Learning (ML), PyTorch, Long Language Models (LLMs), MATLAB, GIT, C, bash, SQL, DMIS.

**Mechanical & Manufacturing:** CAD/CAM (CREO, Inventor, Fusion 360, EdgeCAM), FEM Analysis (Linear & Nonlinear), Manufacturing Process Planning, Quality Control, Metrology (CMM Operation & Programming), 3D Scanning, GD&T, Lean Manufacturing, Prototyping, 3D Printing, Reverse Engineering

**Electrical & Automation:** Microcontrollers (Arduino-based Systems), PLCs, Oscilloscope, Wiring, Soldering, Control Systems, Electro-Pneumatics, Automation

**Software:** ANSYS (Workbench & Explicit Dynamics), ZEISS Inspect, GOM Inspect, PolyWorks, Sinumerik 808D, MS Office (Excel, Word, PowerPoint)

## Languages

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English	C1
German	A2.1
Hungarian	A2
Arabic	Native Speaker

## Awards

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**Faculty's Outstanding Student Recognition** – Eötvös Loránd University, Szombathely, Hungary  
*May 2025*

Awarded for exceptional academic performance during the 2024/2025 academic year.

**3rd Place – Scientific Students' Associations Conference (TDK)**

*Optimization of Medical Device Manufacturing Technology, Dec 2024*

## Volunteering

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**ISAC Vice President of Szombathely Campus**, ELTE International Students Advisory Committee (ISAC), Hungary  
*Sep 2023 – Sep 2025*

Co-founder of ISAC, the official student body representing international students at ELTE.

Led the Szombathely campus and collaborated with the student government and university leadership on student engagement and institutional initiatives.

**International Student Ambassador**, Eötvös Loránd University, Hungary

*May 2022 – Sep 2023*

Served as the official representative of international students both locally and internationally.

Participated in university committees addressing institutional development, internationalization, and student integration.

**European Solidarity Corps – Youth Heritage Project**, Idrija, Slovenia

*Jun 2022 – Jul 2022*

Contributed to the restoration and preservation of Idrija's industrial heritage, a UNESCO World Heritage Site.

Supported renovation of the historic *Giser House* and *Joseph Shaft*, participated in environmental workshops, and helped map local green zones.

**Nation Builders Leadership Program**, U.S. Embassy in Cairo & Civic Education Center, Egypt

*Jun 2022 – Jul 2022*

Selected among 50 Egyptian students to collaborate with American peers on Sustainable Development Goals (SDG)-driven initiatives.

Focused on youth empowerment and community development aligned with 2030 vision.

## Research

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### **Multi-Axis Additive Manufacturing (5-Axis 3D Printing)**

- Developed a 5-axis 3D printing prototype and customized slicer algorithm.
- Integrated control systems to achieve synchronized multi-axis motion.
- Presented findings at the Scientific Students' Associations Conference (TDK).

### **Optimization of Medical Device Manufacturing Technology**

- Investigated machining process optimization for orthodontic medical pliers.
- Designed a custom fixturing system for 5-axis CNC operations.
- Conducted experimental validation using CMM measurements and deformation analysis.

### **Workpiece Deformation due to Clamping)**

- Studied the deformation of workpieces due to clamping forces.
- Performed CMM measurements, ANSYS simulations, and analytical calculations.
- Recommended optimal clamping positions and forces to minimize distortion.