Vella Nedelcheva

Innsbruck, Austria
+359 888 021472
vellanedelcheva@gmail.com
vella-nedelcheva-235535214

Profile

At the age of nine, I discovered a spark for programming that has since grown into a lifelong passion. This led me to graduate from a professional high school of **Telecommunications** with a focus on **System Programming**, where I also developed a strong interest in **Electrical Engineering**, guiding me toward **Electronics**. A robotics internship in **Germany** confirmed my dedication to this field.

I am currently seeking **opportunities** to further develop in **programming** after completing my degree in **Mechatronics**. I bring practical experience in **robotics**, **VR gaming**, **software development**, and **embedded systems**. I am passionate about transforming creative ideas into **efficient** and **reliable solutions** and continuously expanding my expertise in **engineering** and **programming**.

Technical Skills

Languages & Scripting	C++, C#, C, Python, Arduino C, MATLAB, JavaScript, Bash, CMake
Databases & Communication	MySQL, SQL, MQTT
Tools & Frameworks	Unity 2021.3.44.f1, OpenCV, Git/GitHub, GitBash, ROS2, Blender, CLion, VS Code, Visual Studio 2019, Eclipse, Inventor
Hardware	Arduino, Raspberry Pi 4B, Nucleoboard F091RC
Other	VR Development (Meta Quest 2 Controller, Oculus SDK, OpenXR)

Soft Skills

- Analytical thinking, Critical thinking, Self-motivation, Initiative, Curiosity
- Perseverance, Teamwork, Reliability, Assertiveness, Creativity
- Positive attitude, Problem-solving, Attention to detail, Independent learning, Adaptability
- Self-driven, Time management, Flexibility, Self-discipline, Resourcefulness
- Reflective thinking, Good communicational skill

Languages

German: Fluent
English: Fluent
Bulgarian: Native
Russian: Basic

Work Experience

Jan–Apr 2025 **Intern**, *Schiebel Antriebstechnik GmbH*, Vienna, Austria
- Developed **Python** code ensuring high efficiency and reliable performance of DC drives on Raspberry Pi 4B (ARM).
- Built **C++ interfaces** for serial communication with sensors and actuators and their data processing
- Improved system efficiency by identifying and fixing a memory leak
- Created software to process and filter high-frequency sensor data in real time

March – September 2021 **Junior C++ Developer**, *CT Gaming*, Sofia, Bulgaria
- Developed the slot game **Fire Egg** using C++ under Linux
- Gained experience with SDL graphics library and Eclipse IDE
- Link to video demo

June 2019 **Arduino Programmer, Intern**, *WBS Training AG*, Dresden, Germany
- Programmed microcontrollers in Arduino C for a **robotized car project**
- Applied electrotechnical knowledge to implement control logic

Projects

May 15 - August 12, 2025 **Bachelor Thesis – Digital Climbing (VR Game)**, *Unity & C#*
- Independently and with no prior experience developed a VR climbing game in 3 months
- Integrated Meta Quest 2 controllers for motion tracking
- Implemented kinematics, noise filtering, and interactive climbing mechanics
- Combined passion for **climbing & programming** into a VR game
- Link to video demo

June 17 - July 07, 2024 **Turtle Simulation**, *ROS2 & Bash script & C ++*
- Developed a **ROS 2 (C++) node** to autonomously control a Turtlesim robot using publishers, subscribers, and timed callbacks.
- Implemented **state-based motion control** with random direction initialization, edge detection, and boundary avoidance behavior.
- Integrated **real-time pose feedback** and velocity commands for smooth autonomous navigation.
- Link to Github repository

Education

2021–2025 (expected) **B.Sc. Mechatronics, Design & Innovation**, *Management Center Innsbruck (MCI)*
- Elective Modules: IoT, Data Science, Machine Learning, Mobile Robotics, Image Recognition, Personal Skills
- Bachelor Thesis: *Digital Climbing – VR Game*

2015 – 2020 **Technical High School of Telecommunications**, *Sofia, Bulgaria*
- Focus on **System Programming**:

Motivation

I'm driven by the challenge of writing **clean, reliable, and flexible code** that makes real-world systems work efficiently. My goal is to become a **skilled programmer** who contributes to innovative projects in robotics, automation, and both hardware and software development.

Work Style

My mechatronics studies at MCI Innsbruck have strengthened my analytical thinking and taught me the importance of maintaing a broad perspective while paying attention to detail. Besides programming, I write poetry-an experience that has also contributed to shaping my programming mindset, encouraging me to approach problems with both structure and creativity. I strive to work in a **structured and efficient way**, with strong attention to detail and clarity. I thrive in both **collaborative** and **independent** environments. Learning, feedback, and continuous growth motivate me to push beyond my comfort zone and deliver high-quality results.

Interests & Activities

Projects	Erasmus+ Project "No stereotypes for Equality and Inclusion"; Translator for educational project (German → Bulgarian)
Hobbies	Climbing (Former member of the Bulgarian National Climbing Team), Creative Writing, Skiing, Violin