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Cornel Iulian Postolache

Nationality: Romanian **Date of birth:** 25 Sep 1999 **Place of birth:** Tecuci, Romania

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WORK EXPERIENCE

Schaeffler Technologies Engineering – Iași, Romania

Software Engineer & AI Promoter

[1 Oct 2024 – Current]

- **Model-Based Development (MBD):** Engineered embedded software using **Matlab, Simulink, StateFlow, System Composer**, and generated code via **TargetLink**, **Embedded Coder**, and **Matlab Coder**.
- **Automotive Tools & Testing:** Conducted software debugging, calibration, and network analysis using **ETAS INCA**, **Lauterbach Trace32**, and Vector tools (**CANoe, CANalyzer, CANape, CANdb**).
- **Build & Release Management:** Acted as Build Manager; prepared CI-Lists, generated SW Release documentation, and delivered software packages to stakeholders.
- **AI Coordination & Prompt Engineering:** Led the software department's AI initiatives as a Location Promoter in Iași; engineered and customized AI agents using **GitHub Copilot, Claude (Opus/Sonnet), Gemini, GPT**, and **Grok** to automate coding and optimize development processes.
- **Quality & Collaboration:** Maintained code quality via **SmartBear Collaborator** and drove continuous improvement through daily cross-border collaboration with international teams.

Vitesco Technologies Engineering – Iasi, Romania

Software Engineer

[1 Oct 2022 – 1 Oct 2024]

- **Software Development:** Engineered embedded software and code architecture using **C programming** for power electronics systems, including **DC-DC converters** and **Battery Management Systems (BMS)**.
- **Microcontroller Integration:** Configured and programmed high-performance microcontrollers, focusing on **I nfineon TCx (AURIX)**, **PIC**, and **STM8** families, alongside voltage stabilizers.
- **Requirement & Process Management:** Managed software requirements using **Polarion** and aligned development tasks with internal software development processes.
- **CI/CD & Code Quality:** Utilized **GitHub** for version control, **Jenkins** for continuous integration (CI/CD), and **Sq uore** for software quality and analytics monitoring.
- **Testbench Management:** Maintained and configured hardware testbenches to validate embedded software and run hardware-in-the-loop tests.
- **Teamwork & Collaboration:** Collaborated closely within cross-functional engineering teams to deliver project milestones on time.

Vitesco Technologies Engineering – Iasi, Romania

Software Developer Intern

[17 Apr 2022 – 1 Oct 2022]

- **Embedded Software Development:** Assisted in designing and coding embedded software applications for automotive electronic systems using **C programming**.
- **Microcontrollers & Hardware:** Worked closely with **PIC microcontrollers** and analyzed hardware components like **DC-DC converters**.
- **Toolchain & IDEs:** Configured, programmed, and debugged source code utilizing **MPLAB X IDE/IPE** and **Visual Studio Code**.
- **Scripting & Automation:** Developed and executed basic **Python** scripts to automate testing or assist in software verification processes.

🏢 *Self-Employed / PCTecuci.Ro* – Tecuci, Romania

Link www.pctecuci.ro

Founder & Web Administrator

[20 Jan 2017 – Current]

- **Full-Stack Development:** Built and deployed a personal IT blog, forum, and media platform from scratch using HTML/CSS, JavaScript, and PHP.
- Web Design & UI: Designed a modern, clean, and fully responsive user interface optimized for all mobile and desktop devices.
- **SEO Optimization:** Implemented technical on-page SEO to improve search engine indexing and maximize organic traffic.
- **Backend & Logic:** Applied C programming principles and data structures to optimize server-side logic and database efficiency.
- **Systems Administration:** Managed web hosting, domain setup, security configurations, updates, and daily platform maintenance.
- **Content & Community:** Created high-quality IT content and moderated the forum to ensure a safe, engaging user environment.

Live Platform: www.pctecuci.ro

EDUCATION AND TRAINING

PhD Student

Doctoral School, "Gheorghe Asachi" Technical University of Iasi [1 Oct 2024 – Current]

Address: 65 Prof. Dimitrie Mangeron Blvd., 700259 Iasi (Romania) | **Website:** https://doctorat.tuiasi.ro/ | **Field(s) of study:** Engineering, manufacturing and construction: ● Electronics and automation | **Final grade:** PhD Student | **Level in EQF:** EQF level 8 | **NQF Level:** 8 | **Type of credits:** ECTS | **Number of credits:** 240 | **Thesis:** Contributions to Performance Improvement of Digital Control Systems for High-Switching-Frequency Power Supplies

- **Advanced Engineering Research:** Carrying out advanced, original scientific research within the Faculty of Electronics, Telecommunications and Information Technology (ETTI).
- **Methodological Expertise:** Designing and execution of complex engineering experiments, data modeling, and performance optimization for high-tech systems.
- **Academic Contribution:** Preparing comprehensive research reports, authoring scientific papers, and collaborating within advanced doctoral academic groups.

Specialization: *Electronic Engineering, Telecommunications and Information Technologies*

Master's of Science (M.Sc.)

Electronics, Telecommunications and Information Technology, "Gheoghe Asachi" Technical University [1 Oct 2022 – 1 Jul 2024]

Address: 11A Carol I Blvd., 700506 Iasi (Romania) | **Website:** https://etti.tuiasi.ro/ | **Field(s) of study:** Engineering, manufacturing and construction: ● Electronics and automation | **Final grade:** Master's of Science (M.Sc.) | **Level**

in EQF: EQF level 7 | **NQF Level:** 7 | **Type of credits:** ECTS | **Number of credits:** 120 | **Thesis:** Design and Implementation of a Battery Management System for Lithium-Ion Batteries used in Automotive Applications

- **Automotive Control Systems:** Advanced study of electronic control units (ECUs), vehicle dynamics, and powertrain control strategies.
- **In-Vehicle Networking:** In-depth specialization in automotive communication protocols, focusing on **CAN bus** architectures and automotive networks.
- **PCB Design & Prototyping:** Utilized **EasyEDA** for electronic circuit schematic capture and printed circuit board (PCB) design.

Specialization: *Automotive Electronic Control Systems*

Engineer's Degree

Electronics, Telecommunications and Information Technology, "Gheoghe Asachi" Technical University [1 Oct 2018 – 1 Oct 2022]

Address: 11A Carol I Blvd., 700506 Iasi (Romania) | **Website:** https://etti.tuiasi.ro/ | **Field(s) of study:** Engineering, manufacturing and construction: ● Electronics and automation | **Final grade:** 9.5 | **Level in EQF:** EQF level 6 | **NQF Level:** 6 | **Type of credits:** ECTS | **Number of credits:** 240 | **Thesis:** Smart Car Controlled via Bluetooth using a Custom Application Developed in MIT App Inventor

- **Hardware & Electronics:** Acquired strong competencies in analog and digital circuit design, signal processing, power electronics, and embedded systems architecture using **OrCAD Cadence** and **Proteus**.
- **Software & Programming:** Developed advanced skills in firmware development, microcontroller programming (using C/C++/Verilog/Python), hardware description languages (**VHDL**), algorithms, and software testing tools.
- **Academic Project Work:** Successfully completed laboratory modules, simulation projects (Matlab/Simulink), and high-level technical documentation for modern electronic systems.

Specialization: Applied Electronics

Teaching Certification (Level I)

Department for Teacher Training, "Gheorghe Asachi" Technical University of Iasi (DPPD) [1 Oct 2018 – 1 Oct 2021]

Address: Blvd. Prof. Dr. Doc. Dimitrie Mangeron, No. 67, 700050 Iasi (Romania) | **Website:** https://dppd.tuiasi.ro/ | **Field(s) of study:** Education: ● Teacher training with subject specialisation | **Final grade:** 10 | **Level in EQF:** EQF level 6 | **NQF Level:** 6 | **Type of credits:** ECTS | **Number of credits:** 30

- **Educational Psychology:** Studied fundamental concepts of cognitive development, learning theories, and student psychology.
- **Pedagogy & Didactics:** Developed skills in curriculum planning, teaching methodologies, and modern educational technologies.
- **Classroom Management:** Acquired techniques for group leadership, student motivation, conflict resolution, and public speaking.
- **Practical Teaching Internship:** Completed hands-on teaching practice in real classroom environments, designing and delivering technical lessons.

High School Diploma – Veterinary Technician

National College of Agriculture and Economy [14 Sep 2014 – 1 Jun 2018]

Address: St. 1 Decembrie 1918 No. 104, 805300 Tecuci (Romania) | **Level in EQF:** EQF level 4

- **Theoretical Foundation:** Studied animal anatomy, physiology, nutrition, and veterinary pharmacology.
- **Practical Training:** Developed hands-on skills in clinical assistance, laboratory testing, and basic animal care protocols.
- **Core Competencies:** Successfully completed the national high school curriculum alongside technical vocational training, earning the Baccalaureate Diploma.

PUBLICATIONS

[2026]

A Practical Research Approach to Buck Converter Modeling and Digital Control in MATLAB/Simulink This conference paper presents a reproducible workflow for the discrete-time modeling and digital control of synchronous and asynchronous buck converters. It introduces an incremental (velocity-form) PI controller architecture designed to mitigate startup transients, eliminate algebraic loops, and enhance numerical stability within MATLAB/Simulink.

Authors: Cornel-Iulian Postolache, Dorin O. Neacșu | **Journal Name**: The 18th International Conference on Development and Application Systems | **Volume, Issue and Pages**: in press | **Publisher**: IEEE

Cornel-Iulian Postolache, Dorin. O. Neacșu, "A practical research approach to buck converter modeling and digital control in MATLAB/Simulink," in Proc. 18th Int. Conf. Development and Application Systems (DAS), Suceava, Romania, May 2026, in press.

[2025]

Practical Limitations of Digitization Methods in Buck Converter Control This conference paper reviews digitization methods applied to the digital control of a voltage-mode DC-DC buck converter. It analyzes the practical limitations introduced by sampling frequencies and quantization effects using MATLAB/Simulink simulations.

Authors: Cornel-Iulian Postolache, Dorin O. Neacșu | **Journal Name**: 14th International Symposium on Advanced Topics in Electrical Engineering (ATEE) | **Volume, Issue and Pages**: pp. 1-10, DOI: 10.1109/ATEE66006.2025.11299929 | **Publisher**: IEEE

Cornel-Iulian Postolache, Dorin. O. Neacșu, "Practical Limitations of Digitization Methods in Buck Converter Control," 2025 14th International Symposium on Advanced Topics in Electrical Engineering (ATEE), Bucharest, Romania, 2025, pp. 1-10

CONFERENCES AND SEMINARS

[14 May 2025 – 16 May 2025] Iasi, Romania

8th International Conference of the Doctoral School (CSD) Event: 8th International Conference of the Doctoral School (CSD)**Organized by:** "Gheorghe Asachi" Technical University of Iasi**Presentation Title:** *Design and Simulation of Digitization Methods Used in Control of Power Converters***Overview:** Delivered an oral presentation evaluating four digitization techniques (Tustin, Zero-Order Hold, Matched Pole-Zero, and Least Squares) for Buck converters using MATLAB/Simulink, analyzing dynamic performance across various sampling rates.**Awarded:** Certificate of Appreciation

PROJECTS

[20 Jan 2017 – Current]

PCTecuci.Ro Conceptualized, developed, and launched an independent IT community platform, blog, and forum. Architected the full-stack system using **HTML/CSS, JavaScript, and PHP**, and managed long-term web hosting, server security, and database administration. Implemented comprehensive **SEO optimization** strategies to drive high organic user traffic.**Live Project:** www.pctecuci.ro

Links: www.pctecuci.ro | www.forum.pctecuci.ro | www.wiki.pctecuci.ro

CERTIFICATIONS

[Vitesco Technologies & Faculty of ETTI, TUIASI, 1 Jun 2022]

ViTAL Automotive Laboratory – Embedded Software Development Completed an intensive technical training program focused on automotive technologies. Designed and implemented a smart electric vehicle monitoring and control system using an **ESP32** development board via **Wi-Fi** communication, integrating power electronics and digital control principles.

Mode of learning: Blended

Links: https://etti.tuiasi.ro/wp-content/uploads/2021/Evenimente/Comunicat_Sala_ViTAL_dt_ou.pdf | https://etti.tuiasi.ro/wp-content/uploads/2020/Evenimente/ViTAL.pdf

[Continental Automotive & Faculty of ETTI, TUIASI, 5 Oct 2020]

Continental Learning Laboratory SW 2.1 – Embedded Software Development Completed an intensive technical training program focused on low-level embedded software development. Acquired practical skills in microcontroller architecture, IDE configuration, and hardware peripheral programming.Core topics covered:

- Microcontrollers (uC) Overview & IDE setup
- Input/Output (IO) Ports & Interrupts management
- Analog-to-Digital Converters (ADC) & Timers
- LCD interfacing & Pulse-Width Modulation (PWM)

Mode of learning: Blended

[Continental Automotive & Faculty of ETTI, TUIASI, 7 Oct 2019]

Continental Learning Laboratory HW 1 – Hardware Basics (Hands-On) Completed a practical, hands-on training program focused on core electronic hardware principles and circuit assembly.Core topics covered:

- Identification and testing of passive electronic components.
- Analysis and application of technical parameters for electronic devices.
- Schematic reading, prototyping, and assembly of fundamental electronic circuits.

Mode of learning: Research-Lab based

HONOURS AND AWARDS

[1 May 2019] Continental Automotive

Continental Electro-Mobility Hardware Award 2019 Awarded in recognition of technical performance, innovation, and practical assembly skills during the Continental Electro-Mobility Hardware competition.

NETWORKS AND MEMBERSHIPS

[28 Sep 2025 – Current] Iasi, Romania

Graduate Student Member Organization: Institute of Electrical and Electronics Engineers (IEEE)**Details:** Active professional membership acquired to maintain continuous access to the IEEE Xplore digital library, core technical journals, and international standardizations. Utilized to support advanced doctoral research in power electronics, digital control systems, and upcoming high-frequency power supply technologies.Write here the description

LANGUAGE SKILLS

Mother tongue(s): Romanian

Other language(s):

English

LISTENING B2 **READING** B2 **WRITING** B2

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

C Programming / Microsoft Excel / Microsoft Office / DCDC Converter / MATLAB / Microsoft Powerpoint / Embedded Systems

DRIVING LICENCE

Driving Licence: B

Driving Licence: B1

Driving Licence: AM