# Igor Stanković – Softverski test inženjer

Moje ime je **Igor Stanković**, imam 27 godina i po zanimanju sam **inženjer informatičkih znanosti**. Završio sam **diplomski studij na Tehničkom veleučilištu u Zagrebu (TVZ)**, a od **ožujka 2020.** radim u tvrtki **Xylon** kao **softverski test inženjer**.

Prilikom mog dolaska u tvrtku, tim za **integraciju i automatizaciju testiranja** bio je u početnim fazama razvoja, što mi je omogućilo da sudjelujem u stvaranju projekta **od temelja**. Kroz godine, tim je značajno napredovao uz vodstvo iskusnog inženjera, te danas naš **automatizirani sustav testiranja** aktivno provjerava hardverske uređaje koje prodajemo, kao i njihove **SDK alate, desktop aplikacije i razvojne tool kitove**.

Naš **projekt za integracijsko testiranje** strukturiran je prema principima **objektno-orijentiranog programiranja (OOP)**, uz **SOLID načela** kako bi osigurao **održivost, proširivost i lakoću održavanja**. Implementirali smo **moderne dizajnerske obrasce (Design Patterns)**, čime smo optimizirali **fleksibilnost arhitekture**, povećali **ponovnu upotrebljivost koda** te poboljšali **skalabilnost sustava**.

### **Tehničke vještine i iskustvo**

Aktivno sam sudjelovao u **dizajniranju i razvoju testnog sustava**, koji pokriva širok spektar testiranja, uključujući: ✅ **Testiranje mrežnog prometa** – Ethernet, CAN, VIDEO, UART uz visoke količine podataka ✅ **SDK testovi u C++** – Provjera integracije i performansi ✅ **Performance testovi** – Praćenje stanja sustava pod opterećenjem kroz verzije ✅ **Testovi izlazne kontrole** – Automatske provjere uređaja prije isporuke (HW info-based tests) ✅ **Property-Based Testing (PBT)** – Generiranje variranih ulaznih podataka za analizu stabilnosti ✅ **Stateful testing** – Analiza promjena stanja sustava kroz niz operacija (npr. Playback komande)

Koristim **napredne alate** za automatizaciju i analizu testiranja, uključujući **Jenkins pipeline-ove i jobove, PostgreSQL baze podataka** (za analizu logova poput serial\_log, http\_log, events, invocations). Za konkurentnost i skalabilnost koristim **Actor model** putem **Pykka aktora**, omogućujući **sigurno i efikasno upravljanje multi-threading operacijama**.

### **Mikroservisi i sistemska integracija**

Uz testiranje softvera, sudjelovao sam u **razvoju i održavanju mikroservisa**, koji se koriste unutar tvrtke: 🔹 **Ethernet promet generator** – Simulacija mrežnih uvjeta za testiranje uređaja 🔹 **PTP server za sinkronizaciju uređaja** – Precizno vremensko usklađivanje hardverskih komponenti 🔹 **Razvoj GUI aplikacija** – Interaktivni alati za upravljanje i analizu sustava

Moje iskustvo uključuje **projektiranje, automatizaciju i optimizaciju testnih sustava**, s naglaskom na **povećanje efikasnosti testiranja i analizu performansi proizvoda**.

# Igor Stanković – Software Test Engineer

My name is **Igor Stanković**, I am 27 years old, and I am a **computer science engineer**. I completed my **master's degree at the Zagreb University of Applied Sciences (TVZ)**, and since **March 2020**, I have been working at **Xylon** as a **software test engineer**.

When I first joined the company, the **integration and automation testing team** was still in its early stages, allowing me to participate in building the project **from the ground up**. Over the years, the team has grown significantly under the guidance of experienced engineers, and today, our **automated testing system** actively verifies the hardware devices we sell, as well as their **SDK tools, desktop applications, and development toolkits**.

Our **integration testing project** is structured according to **object-oriented programming (OOP) principles**, adhering to **SOLID guidelines** to ensure **maintainability, scalability, and ease of development**. We have implemented **modern design patterns**, optimizing **architecture flexibility**, improving **code reusability**, and enhancing **system scalability**.

### **Technical Skills and Experience**

I have actively contributed to the **design and development** of the testing framework, which covers a wide range of testing scenarios, including: ✅ **Network traffic testing** – Ethernet, CAN, VIDEO, UART with high data transfer rates ✅ **SDK testing in C++** – Validation of software development kits ✅ **Performance testing** – Monitoring system behavior under load across multiple versions ✅ **Output control tests** Automated checks before product shipment (HW info-based tests) ✅ **Property-Based Testing (PBT)** – Generating varied input data to analyze software stability ✅ **Stateful testing** – Tracking changes in system state over time (e.g., playback commands)

I use **advanced tools** for automation and analysis, including **Jenkins pipelines and jobs, PostgreSQL databases** (to log and analyze serial\_log, http\_log, events, invocations). For **parallel execution and scalability**, I leverage **Actor model** using **Pykka actors**, allowing **efficient and safe multi-threading operations**.

### **Microservices and System Integration**

Beyond software testing, I have also worked on **developing and maintaining microservices** used in the company: 🔹 **Ethernet traffic generator** – Simulating network environments for device testing 🔹 **PTP server for device synchronization** – Ensuring precise hardware time synchronization 🔹 **GUI application development** – Interactive tools for system monitoring and control

My experience includes **test framework development, automation, and performance optimization**, with a strong focus on **enhancing testing efficiency and ensuring product reliability**.