

Ivan Germanov

Software Engineer

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EXPERIENCE

Post. Frontend Engineer

Post.news

📅 09/2023 - 04/2024 [New York, United States](#), Remote

News content platform (similar to X), early-stage startup.

- **Platform Development:** Built a web and mobile (Android, iOS) news content platform using Solid.js, Solid Start, TypeScript, Capacitor, XState, Zod, Cypress, Vite, and Vitest.
- **Core Features:** Implemented features such as tags for posts, content reposting, profile customization, and native push notifications using OneSignal.
- **Accessibility:** Implemented accessibility improvements to meet A11Y standards.
- **Native Sharing:** Developed native iOS and Android sharing functionality, enabling users to share posts and profiles directly via the system's native share sheet (e.g., sharing to other apps, saving to notes).
- **A/B Testing:** Implemented Amplitude for A/B testing, contributing to decisions that improved user retention.
- **User Behavior Tracking:** Implemented user behavior tracking using Singular, capturing metrics to inform product decisions.
- **UI/UX:** Revamped multiple components of the platform to align with new Figma design system, and was responsible for maintaining the alignment between design specifications and product.
- **Newsletter System:** Developed and maintained dynamic email templates for newsletters using MJML, ensuring daily delivery to all users.
- **Testing:** Developed and maintained automated Cypress end-to-end tests to prevent regressions.

Software Engineer

Axion BioSystems

📅 11/2020 - 08/2023 [Eindhoven, Netherlands](#)

Biomedical company, advanced microscopes and cloud-based platform for cellular experiments.

- **WPF to Electron Migration:** Migrated a legacy WPF application to a modern web stack using Electron, Vue, TypeScript, and WebSockets, based on Figma prototypes that I designed and refined through user testing.
- **Backend:** Built and optimized video and image export containers deployed on Microsoft Azure, leveraging C#, Node.js, Docker, and FFmpeg.
- **Monorepo Transition:** Led initiative to transition from a monolithic frontend to a modular monorepo using pnpm workspaces.
- **Codebase Migration:** Led codebase migration effort from Vue 2 to Vue 3 by leading team meetings and writing a wiki to document the process.
- **CI/CD Pipeline Improvement:** Migrated project from Tailwind 1 to Tailwind 2, verified migration using BackstopJS, and reduced CI/CD pipeline build time by 5x.
- **Package Management:** Established CI/CD pipelines for publishing JavaScript and Vue packages to a private Azure registry, enabling reuse across projects.
- **Code Architecture Improvement:** Improved code maintainability and separation of concerns by introducing the Axios repository pattern in TypeScript.

EDUCATION

TU/e MSc in Computer Science and Engineering

Eindhoven University of Technology

📅 2022 - 12/2024

- Master thesis 8.5/10
- Data structures and Algorithms, Advanced algorithms
- Architecture of Distributed Systems, Big Data Management
- Machine Learning, Deep Learning
- Database modelling
- Probability and Statistics, Calculus, Logic and Set Theory
- Automata, Language Theory and Complexity
- Technology Entrepreneurship and Marketing



BSc in ICT and Software Engineering (Cum Laude)

Fontys University

📅 2017 - 2021

- Desktop development and OOP (C#)
- Databases
- Web development (Angular, Laravel)
- Design patterns
- Operating systems, Multi-threading (Java)
- Networks, Client/Server applications
- UI/UX



High School Diploma

First English Language School (FELS)

AWARDS



Best Student Award

Ranked 2nd highest GPA (9.0/10) out of ~200 students

FIND ME ONLINE



Personal Website

www.ivan.it.com



GitHub

www.github.com/ivangermanov



LinkedIn

www.linkedin.com/in/ivangermanov

EXPERIENCE

Junior Software Engineer

CytoSMART Technologies

📅 10/2019 - 10/2020 📍 Eindhoven, Netherlands

- **Image Processing Tools:** Built and designed browser-based image processing tools using Vue, TypeScript, WebGL, C# and Microsoft Azure.
- **ASP.NET to Vue Migration:** Collaborated with the team to transition web pages from ASP.NET to Vue SPA.
- **Testing:** Introduced Cypress for end-to-end testing and increased unit tests from 300 to 1000 (92% coverage) through Test-Driven Development (TDD).
- **Development Workflow Improvements:** Improved the developer workflow by integrating Git hooks (husky) and ESLint to automate code quality checks.

Software Engineer Intern

CytoSMART Technologies

📅 03/2019 - 09/2019 📍 Eindhoven, Netherlands

- **Visualization App:** Developed an interactive visualization application for cell colony analysis using React, Redux, LeafletJS, and D3.js.
- **Performance Optimization:** Optimized dynamic filtering and visualization of tens of thousands of data points.
- **Data Storage:** Improved storage and retrieval performance of gigabytes of data using Azure Blob Storage.

PERSONAL PROJECTS

Topic Modeling of OpenML Dataset Descriptions (AI)

🔗 <https://github.com/ivangermanov/openml-tags>

Master thesis project — developed a novel NLP pipeline to automatically generate tags for texts, improving discoverability and organization on the OpenML platform.

- **Data Preparation:** Conducted in-depth exploratory data analysis and data augmentation to improve input quality.
- **Advanced NLP Techniques:** Integrated LLaMA-3-70b LLM for prompt-based tag generation and a DeBERTa-based zeroshot classifier for tag filtering, achieving nuanced and context-aware tagging.
- **Model Optimization:** Extended and optimized the BERTopic model with advanced embedding (Salesforce/SFR-Embedding-2_R) and dimensionality reduction (UMAP) techniques, fine-tuned using Bayesian optimization.
- **Automated Evaluation:** Achieved a combined NPMI and diversity score of 0.779, outperforming established baselines (LDA, NMF, Top2Vec, CTM) in automated evaluations.
- **Human Evaluation:** Conducted a user study (n=21) and large-scale automated evaluation (using GPT-4-mini), demonstrating superior performance compared to the baseline and approaching human-level results on multiple metrics.
- **Cost-Effective Pipeline:** Developed a computationally cheaper pipeline configuration maintaining acceptable tag quality.

Kraft Heinz Overfill

📍 Iowa City, United States, Remote

🔗 <https://github.com/ivangermanov/heinz>

Created an app to predict product overfill in a Kraft Heinz factory.

- **Requirements Gathering:** Gathered on-site information and requirements about factory operations and data flows.
- **Visualizations:** Developed interactive graphs and visualizations related to overfill metrics using Vue, Quasar, and ECharts.
- **Machine Learning Integration:** Developed a Python Flask backend integrating scikit-learn and TensorFlow models for predictions.

COURSES

Scalability & System Design for Developers

Educative.io

The Python Mega Course: Build 10 Real World Applications

Udemy

The Complete JavaScript Course: From Zero to Expert

Udemy

SKILLS

Languages

JavaScript	TypeScript	C#		
Python	Java	PHP	SQL	HTML
CSS/Sass/SCSS	GLSL/WebGL			

Frameworks and Libraries

Vue	Vuex	Nuxt	React	Redux
Solid	Solid Start	Laravel		
Eloquent	Electron			
Capacitor/Cordova	LeafletJS	D3		
Tailwind	Bootstrap	jQuery		
Webpack	Vite	ESLint	Jest	
Vitest	Cypress	FFmpeg		
ASP.NET	Entity Framework	xUnit		
ASP.NET Identity	Newtonsoft.Json			
Node.js	Express	Flask		

Tools and Technologies

Git	Docker	Linux	pnpm	
Turborepo	Husky	Azure Pipelines		
GitHub Actions				

Cloud & Databases

Microsoft Azure	AWS	SQL Server		
MySQL	Spark	Hadoop		

PERSONAL PROJECTS

Room Reservation System for University

🔗 <https://github.com/ivangermanov/frooms>

Developed an interactive room reservation system.

- **PWA:** Developed an interactive room reservation system as a Progressive Web App (PWA) using Vue and Nuxt.js.
- **Dynamic Map:** Implemented a dynamic map for room reservations with LeafletJS.
- **Backend API:** Built a back-end REST API using C# ASP.NET by following the repository pattern, dividing the API into controllers, services, and a database layer.
- **Real-time Data:** Integrated the university's open API for real-time room availability.
- **Database Management:** Managed database schema evolution using migrations.

Barkpedia

🔗 https://github.com/ivangermanov/laravel_project

Built a website for dog breed information.

- **Dog Breed Website:** Built a website for dog breed information using Laravel and Eloquent ORM.
- **Core Features:** Supported detailed breed information, including rich text descriptions, images, relationships with authors, and the ability for authors to create and manage breeds.
- **Frontend Design:** Designed a responsive front end with Blade templates and Bootstrap.
- **Authentication:** Implemented multi-level user authentication and authorization (guest, author, admin).
- **Admin Panel:** Developed an admin panel with user overviews and data export options in CSV format.
- **PDF Rendering:** Included features for generating and rendering dog breed information as PDF files.
- **Database Management:** Built and managed the database with migrations and seeding.

Jazztastic3 Event Management System

🔗 <https://github.com/ivangermanov/jazztastic3>

Event management system with a public website, mobile app, and multiple internal desktop apps to manage all aspects of the event.

- **Web Portal:** Developed a user-facing website using ASP.NET Web Forms, featuring registration, login, profile management, an interactive map for tent reservation using jQuery and Panzoom.js, and a ticketing system with download functionality and unique ticket generation.
- **Mobile App:** Created a cross-platform mobile app using Unity to provide attendees with event information and interactive maps.
- **Desktop App Suite:** Developed a suite of C# and WPF applications for back-end operations, including a loan management system with Phidget RFID integration; a visitor check-in/check-out system using QR code scanning (ZXing, AForge) and RFID assignment; a POS system for on-site merchandise sales with receipt generation; and a central admin dashboard providing real-time KPI monitoring and visualizations via LiveCharts, pulling data from MySQL.
- **Hardware Integration:** Leveraged Phidget22 to integrate with RFID chips for event access control.
- **ATM Simulation:** Developed a C# application simulating ATM functionality, including transaction logging and visitor balance updates within MySQL.
- **Ticket Generation:** Created a C# application designed to generate printable tickets in PDF format. The application incorporated QR code generation using ZXing.

PERSONAL PROJECTS

Supplement Savvy

🔗 https://github.com/ivangermanov/supplement_savvy

Developed a bare-bones PHP, HTML, CSS, and JavaScript web application for fitness supplement reviews without any frameworks.

- **Dynamic Search:** Integrated AJAX search with jQuery and PHP for real-time product suggestions.
- **User Authentication:** Implemented user login/signup with PHP sessions and password hashing.
- **Database:** Designed a MySQL database for product data, user management, ratings, and reviews.
- **Rating System:** Implemented a dual staff/user rating system with dynamic visual star representation.
- **Commenting System:** Implemented a commenting system that lets users leave comments after they log in.

VOLUNTEERING



Student Teacher and Technical Help

Fontys University

📍 Eindhoven, Netherlands

- Participated at Fontys as a student teacher and provided technical support.
- Guided a team of international students to develop a proof of concept using NAO robots.
- Utilized the Choregraphe API for robot programming and task implementation.
- Led the team to win the first-prize award for their proof of concept project.