CURRICULUM VITAE
JĘDRZEJ LEWANDOWSKI, MD

FULL STACK + PHYSICIAN

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Motto: "Man Has No Good in Himself and Can Glory in Nothing"
Thomas. A. Kempis, The Imitation of Christ.

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EDUCATION

- 2014 - 2021 — Medical University of Warsaw. Title: doctor of medicine
- Polish physician license no 3619620

WORK EXPERIENCE

- 2004 – 2017:   Self-taught programmer
- 2016 – 2018:   Chief of IT department in ACA Soli Deo (non-profit)
- Mar 2018 – Aug 2019:   Architect and full-stack developer of WISE system in wise-team.io
- Sep 2019 – Nov 2020:   Typescript full-stack at Pitchup.com
- Dec 2020 – Feb 2021:   Senior fullstack developer at Refair.me (part-time)
- Mar 2021 – Sep 2021:   Preparing & passing Polish Medical Final Examination (84%)
- Oct 2022 – current: Intern physician at Olsztyn Voivodeship Specialistic Hospital
- Feb 2022 — current: Cost CA20124 management committee member (non-profit)

IT PROJECTS

2004 - 2017 — SELF-TAUGHT PROGRAMMER.

- 2006-2016: **Websites for local organizations**. Webdesign + backend. Stack: *HTML/CSS, PHP/CakePHP, Wordpress theme/plugin development.* Learned: cooperation with clients

- 2009: **Mailing system for local hospital**. Stack: PHP. Learned: cooperation with IT department

- 2008-2012: **MUD (text-based online multpliayer game)** — 60ksloc over 5 versions. Stack: SVN->Hg->GIT, Java SE, advanced concurrent programming, Jetty/Netty, custom WebSockets, SQLite, PostgreSQL, SSH, remote deployment. Learned: versioning, complex OOP patterns, multiple distributed app design approaches (lifecycle, eventbus, reactive/observable, sagas), collaboration in a small team.

- 2015: **Distributed photo library system**: Management of 400k+ photo libraries distributed over several external HDDs with replication and duplicate detection. Stack: *Java SE/Swing*. Learned: scaleable development

- 2015-2017: **domestic heating management system**. Stack: *ESP32, ST ARM, Java SE, RabbitMQ, mesh networking*. Learned: embedded development, dealing with networking QoS and outages

2016 - 2018 — CHIEF OF IT DEPARTMENT AT ACADEMIC CATHOLIC STUDENT ASSOCIATION SOLI DEO (NON-PROFIT) .

- Designing the website solideo.pl (which required custom backend) and posters for events. Learned: public consultations and focus groups

- Implementation of HR and internal assets management system based on NextCloud. Learned: DevOps at scale.

- Music driven lighting system for big events (150+ participants). At Soli Deo I was responsible for stage lights and sound at events. There I created a lighting system for large halls, both hardware and software. Challenges: (1)

realtime software DSP with spectral analysis and a realtime; (2) low-cost, high distance, low latency communication with stage lights (implemented using digital current loops instead of voltage gated signals which removed the need of cable shielding). Learned: interaction between software and physics, electrical safety paperwork

2018 - 2019 — ARCHITECT AND DEVELOPER OF WISE AT WISE-TEAM.IO

Stack: Steem blockchain + Typescript/Node.js/browser + Vue.js + Docker/swarm + PostgreSQL/PostgREST + Redis/socket.io + Hashicorp Vault + Travis + Ansible + Logz.io
Wise-team.io (https://github.com/wise-team) was a blockchain startup. We run a Steem (now Hive) blockchain witness node and maintained two decentralized apps for Steem blockchain: Engrave and Wise. I was the architect and lead of the WISE system. Wise was a platform that allowed "whale" users to delegate their voting power under strictly defined and publicly visible criteria. We designed a 2nd layer blockchain protocol with a toolset: a nodejs library, a cli tool, and a web portal. **Learned**: secure development where client money is at stake • TDD • secure CI/CD • cryptographic key management (using Hashicorp Vault) • managing open-source project and collaborating with the community (PRs, issues) • hosting public • presenting project at a conferences (Steem Meetup Warsaw, Steemfest 2018)

2019 - TODAY — PERSONALIZED PATIENT ADVICE SYSTEM FOR VOIEVODSHIP REHABILITATION HOSPITAL FOR CHILDREN IN AMERYKA (NON PROFIT PROJECT)

Stack: Firebase (Functions/Firestore/RealtimeDB/Auth/DynamicLinks/Hosting) + Typescript/Node.js/browser + Vue.js + + Android native + Google Play store + Travis
I was asked to develop the system by doctors in Allergology Ward of the Voivodeship Children Rehabilitation Hospital in Ameryka. It was aimed to help with two issues: (1) allergic test have long evaluation time and the results arrive after patient discharge; (2) the advice is often complicated and hard to remember by the patient. This app allows patient's parents to view medical advices on their mobile devices. This is a non-profit and open source (GPLv3) project: https://github.com/Jblew/amerykahospital-personalizedadvice / website: https://aplikacja.ameryka.com.pl/.
Learned: providing training for and users and IT support staff • GDPR compliance

2019 - 2021 — HI.PINE GAMIFIED CHENEAU BRACING (NON PROFIT PROJECT)

Stack: Typescript, Vue, React, Google IoT platform, GCP datastore, ESP32, Platform.io, Markovian+Bayesian ML
Cheneau is an effective means to treat juvenile scoliosis but the difficulty lies in the fact that an adolescent has to wear the rigid brace 23 hours a day. I was asked to develop a device to monitor therapy compliance and angle progression. In a multidisciplinary team we designed several prototypes of a device to be mounted on Cheneau braces. During the development of the project we decided that gamification will be more effective than plain control of compliance. To elevate my skills on gamification I completed a month-long Behavioural Design Masterclass by Yu-kai Chou and obtained an Octalysis Level 1 certificate on gamification. The project also facilitated development of near-realtime hidden markov classifier for pattern recognition in 3*9dof motion sensors. The project was discontinued due to an earlier success of similar solution (we decided that it is better to start designing in another field rather than compete with already working solution that embraced core features of our idea). **Learned**: secure IoT device management • collaboration with machine-learning expert • preparing data for machine-learning work • ML DevOps (data management, model deployment)

2019 - 2020 — PITCHUP.COM

Stack: Typescript, NodeJS, Vue, Xstate, GraphQL/Hasura, Postgres, Python, Gitlab
At Pitchup.com I was consulting Typescript related decisions and issues, building search middleware, designing a proof of concept (and later implementing) a novel approach to frontend state management using finite state machines (xstate machines as a state provider for vue). I also implemented SQL views and procedures for Hasura GraphQL backend. **Learned**: finite machines, collaboration with UX team and understanding UX research reports, improved English

12.2020 - 2021 — REFAIR.ME

Stack: Typescript, NodeJS, PostgreSQL, TypeORM, Vue, Gitlab, Jira
Refair.me was an innovative HR platform for gamified referral-based recruitment. I was a half-time senior fullstack developer working on refactoring both backend and frontend to Typescript. The project was discontinued on Feb 2021 due to lack of financing. **Learned**: refactoring large codebase on actively developed project

<u>09.2021 – 09.2022 — Voivodeship Specialist Hospital in Olsztyn</u>
Wards: Traumatology, Cardiology, Primary Care, Maternity ward (labour tract), Emergency Department, General surgery, Intensive care, General Pediatrics, Neonatology, General Psychiatry.
After completing medical university and passing Polish Medical Licensing Exam I am completing the mangatory physician internship. I chose Voivodeship Specialist Hospital in Olsztyn because the hospital is organized around large emergency department and holds status of a trauma center which means that there is an opportunity to learn emergency care and gain experience in treating common iatrogenic complications that are more often admitted than in most hospitals. **Learned**: teamwork in stressful situations, emergency closed-loop mode communication, working in a highly hierarchical community, professional communication with patients

IT SKILLS

Highlights: Fullstack (Typescript + Vue/react + Node.js) + Go + cloud + Kubernetes;
Learning: datascience (Julia, Bayesian/markovian methods)

Languages
★★★★★ Typescript + Javascript (TOP 8 Typescript developer in Poland on Codersrank.io). Browser + Node.js
★★★★☆ Software architecture: UML, SOLID/DDD/component architecture/efficient boundaries
★★★★☆ Go
★★★☆☆ Julia
★★★☆☆ Java SE 8
★★☆☆☆ Python
★★☆☆☆ Dart

Frontend
★★★★★ Vue.js + vuex + vue-router
★★★★☆ xstate (state machines)
★★★☆☆ React
★★★☆☆ IndexedDB (Dexie.js)
★★★☆☆ React + redux
★★★☆☆ Webpack
★★★★☆ HTML5 + CSS3
★★★☆☆ Design: Figma, Affinity Designer
★★★☆☆ Bootstrap (React-boostrap, Vue-bootstrap)
★★★☆☆ Material design (Vuetify)
★★★☆☆ SASS (SCSS)

Tools
★★★★★ Docker + docker swarm
★★★★☆ Kubernetes (+microk8s)
★★★★☆ Github actions
★★★★☆ TDD (Mocha, Jest, Tslint, Sinon, Istanbul/nyc, go test, python.unittest, julia test, JUnit, Codecov, Code Climate)
★★★★☆ NPM package publishing

★★★★☆ Git + github + conventional commits
★★★☆☆ Linux (Debian family)
★★★☆☆ BASH + ZSH
★★★☆☆ Hashicorp Vault

Databases
★★★★☆ PostgreSQL + query profiling + NoSQL mode
★★★★☆ Firestore / Realtime Firebase
★★★★☆ GraphQL (Hasura + Apollo)
★★☆☆☆ MySQL/MariaDB
★★☆☆☆ Redis

Backend services
★★★★☆ Nginx (proxy, ws, fastcgi, tsl/ssl, templating, dynamic)
★★★☆☆ OAuth (custom flow for Steemconnect with Passport.js and Hashicorps vault)
★★★☆☆ ExpressJS
★★★☆☆ ExpressJS
★★☆☆☆ Apache 2

Cloud/serverless
★★★★☆ GCP / Firebase
★★★☆☆ Bare metal server administration
★★☆☆☆ Amazon AWS (S3, EC2, IAM)
★★☆☆☆ Digitalocean
★★☆☆☆ OVH public cloud

Blockchain
★★★★☆ Hive (former steem) blockchain (Hive/steem dApp architect)

Misc

★★★☆☆ Embedded programming: Platform.io/Arduino. IC families: STM32, ESP32, ATM8, nRF52

★★★☆☆ Cryptography with an understanding of several algorithms and associated threats. Did experimental implementations of these. I am also currently an administrator of two Hashicorp Vault servers at Wise.

★★☆☆☆ Operating measurement equipment: digital oscilloscope and DDS function generator. (Used this mostly for physics experiments at home.)

★★☆☆☆ Electronic circuit design and board prototyping.

★★☆☆☆ Lan networks with complicated mesh setup

CERTIFICATES, KEYNOTES, PUBLICATIONS

- PL TOP 8 Typescript, PL TOP 8 Vue.js, PL TOP 9 Golang on Codersrank.io (https://profile.codersrank.io/user/jblew). Based solely on my open source work
- OCUP2 Certified UML professional, level: foundation. Certificate: https://www.omg.org/cgi-bin/searchcert.cgi?keywords=cid683425
- Octalysis level 1 certificate in gamification (https://octalysisgroup.com/certificates-list/)
- Polish Medical Licensing Exam: 84%
- Polish physician license no 3619620
- Cost CA124 (AI4NICU) management committee member (https://www.cost.eu/actions/CA20124/#tabs+Name:Management%20Committee)
- I gave a keynote speech at Infomeet Wrocław 2019 "How to unleash the power of typescript in your project" (https://cv.jblewandowski.com/infomeet19-typescript-keynote-1.0.0.pdf)
- Participated in two academia publications (https://orcid.org/0000-0003-4091-642X)

LANGUAGES

English C1 (worked remotely in the UK), Polish native

INTERESTS AND EXTRACURRICULAR ACTIVITIES

- Programming since I was 9 years old
- I love playing film music on piano
- I play blitz (5+0) chess on Lichess
- I love modern and contemporary art (See my introductory lecture on modern art: https://github.com/Jblew/sztuka-nowoczesna-sztuka-wspolczesna-wyklad)
- Former member (2015-2021) and elected Vice-chairman (2016-2017) of Academic Catholic Student Association Soli Deo.