YERKIN TULENOV

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EDUCATION

The University of British Columbia in Okanagan — Kelowna, BC
Bachelor of Applied Science, Electrical Engineering — *Sep 2021 – Jun 2025*

- CGPA of 78%
- Relevant Coursework: Digital Logic Design, Machine Learning, Signal and Communication Systems, Network Engineering, Electric and Magnetic Fields, Mathematical Modelling, Artificial Neural Networks, Applied Engineering Design, Engineering Statistics, Engineering Project Management, Economic Analysis, Electromechanical Devices, Systems Control
- Certifications: Google Cybersecurity Certificate Program, Dbourke's PyTorch, Frontend Web Development, Automate with Python, Advanced Computer Vision with Python, Solar Decathlon Building Science Education Series, Stanford's Machine Learning, CompTIA A+, CCNA, CLF-C01, CompTIA Network+

TECHNICAL SKILLS

Languages: Python, C++, MATLAB, Bash, R/RStudio, JS/HTML/CSS, Typescript, AutoCAD, SolidWorks, React, SQL
Software: Git/Github, Google Colab, VS Code, Jupyter Notebook, NodeJs, AWS, MS Project, AutoCAD, MS Office, REVIT, MySQL, Raspberry PI, PFsense+, LTSpice, EasyEDA, KiCAD EDA,
API and Frameworks: PlanetScale, ClerkAuth, Cloudinary, React, Tailwind, Prisma
Libraries: OpenCV, Pandas, NumPy, Matplotlib, Labelme, TensorFlow, Pytorch, Json, Keras, Openpyxl, Selenium, NextJs, Prisma, Tailwind, ShadcnUI
Hardware: Verilog, ARM Assembly, Quartus, Arduino, Raspberry PI, Circuit Design/Components

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Standards: EAC 2021, NIST CSF, Net Metering, REST API, AWS IAM, DMZ, and VPC
Automation and Reporting: MySQL, Python, OpenPyxl, Matplotlib, Pandas, Excel, MS Project, InduSoft Web
Project Management: Subcontractor Management, Process Automation, Daily Reports, Electrical System Installation, Schedule Development
Electrical Engineering: Electrical Installation, GOST Compliance, EAC Compliance, HMI
Modelling: AutoCAD, SolidWorks, REVIT
Tools: AutoCAD, SolidWorks, REVIT, AWS, EasyEDA
Languages: Python, C++, Typescript/HTML/CSS, SQL, Bash, Shell, Powershell
Software: Node.Js, AutoCAD, AWS, MS Office, MS Project, Git/Github, MySQL, Raspberry PI
Modelling: AutoCAD, SolidWorks, REVIT, Pfsense+, Suricata IPS/IDS, AWS VPC, AWS EC2
Libraries: OpenCV, Pandas, TensorFlow, Openpyxl, NextJs, Prisma, Tailwind, ShadcnUI, React
Compliance: GOST Compliance, EAC Compliance, HMI, REST API

EXPERIENCE

PCB Designer — May 2024 – Present
Milsan Elektronik — *Ankara, Turkey*

- Designed **high-speed low-power domestic card PCBs** for coffee makers and ovens, integrating **ARM microcontrollers** for capacitive touch sensor operations and programmed them in C++ using SOC programming tool
- PCB **routing** of high speed components such as **SOC, MCU, MPU** of up to **32MHz**
- Implemented **isolated controlled transformerless AC/DC converters**, **relay driver** and **control systems**, routed signals, checked printed routes using DMMs and components packages on PCBs using **EasyEDA**
- Analyzed **impedance matching** for the designs, **calculated trace widths** and **copper pour areas** based on heat dissipation analysis and conducted **DRC checks**
- Verified **component footprints** from manufacturing data sheets, developed **BOM lists** and **Gerber files**, sourcing cost-effective alternative components from **multiple different manufacturers** and saving company **62000$ dollars**

Network Engineer — May 2023 – Aug 2023
Bosk Bioproducts — *Quebec City, Canada*

- Conceptualized, and implemented a **Hybrid infrastructure** merging **DMZ**, **Restricted Zone**, and **VPC** with public and private **subnets**. Pitched plan to the CEO using **PowerPoint**, securing approval for **migrating** company's IT infrastructure to **AWS**
- Boosted internet speed by **40**% by creating subnets for each business division and configuring a **Wi-Fi 6 mesh system**. Enhanced network security by integrating **Pfsense+ firewall** and **Suricata IPS/IDS**, reducing risk of **phishing attacks** by 25%
- Provided technical support at the network level for **WAN** and **LAN** connectivity, **router, firewall**, and **30+** computer hardware on **Windows, Linux, MacOS**. Enhanced network security by integrating **Pfsense+ firewall** and **Suricata IPS/IDS**, reducing the risk of **phishing attacks** by 25%
- Organized **WAN** and **LAN** network level connectivity using **Powershell** and **Bash**. Adapted system configurations for **router, firewall**, and **30+** computer hardware on **Windows, Linux,** and **MacOS**
- Established a robust network through communication with company divisions, engaging **10+ stakeholders**, and addressing identified issues. Administered surveys with **15 employees** to enhance a more reliable and user-friendly file transfer service
- Created a **FileCloud EC2** instance in **AWS** with composed **IAM** access and data synchronization, incorporating **NIST CSF** practices

IT Support May 2023 – Aug 2023

ECO2 *Quebec City, Canada*

- Collaborated with Head Geoengineer and previous IT team to gather requirements, design database, and implement modifications to existing **PLC/HMI** system across 3 production lines
- Added site sensors **historian** to track chemical process conditions by integrating **MySQL database**, facilitating real-time monitoring of temperature, pressure, flow rates, and pH levels across **20 different process units**
- Configured dependencies for old **InduSoft Web software** version to automate completion of progress reports and eliminate possibility of chemical leaks

Head Manager Assistant May 2022 – Aug 2022

KH Stroy - 200 projects, totalling 130000m2. Kazakh subdivision of Altaca Group *Almaty, Kazakhstan*

- Monitored daily construction progress, by creating **15 pile-filling reports** using **AutoCAD** to track advancements
- Coordinated and supervised **10 subcontractors**, conducted daily inspections to assess each subcontractor's performance, addressed issues, and delivered status reports to the Head Manager
- **Automated** generation of **120 daily progress reports, concrete pouring records**, and other requested reports by deploying **Openpyxl, Matplotlib, and Pandas** enhancing efficiency by **90%**
- Collected data of **5 month concrete pour trend** and systematized a new **schedule plan** in **MS Project** to expedite work on **21 residential buildings**, cutting 2 months of delay and restoring project to its original termination date

System Administrator May 2021 – Aug 2021

Koktobe City - 50+ individual residential buildings. Subdivision of Kusto Group Holding *Almaty, Kazakhstan*

- Handled daily operations, administered anti-virus software, password manager software and troubleshooted issues for **200+ users**, ensuring seamless workflow for organization
- Provided technical support for VMware Workstation infrastructure to maintain "Bitrix24" server for over **40 employees** to perform financial documentation

Electrical Engineering Internship May 2021 – Aug 2021

Koktobe City - 50+ individual residential buildings. Subdivision of Kusto Group Holding *Almaty, Kazakhstan*

- Oversaw installation and maintenance of electrical systems in **23 residential buildings** by **analyzing maps and plans**
- Summarized estimated costs of purchasing grounding electrodes, grounding conductors, and plates which complied with **Kazakh Standards (GOST)**
- Updated on power needs, electrical code questions, and construction schedule management to the Head Electrical Engineer to meet critical resource allocation and technical issues

PROJECTS

Online Electronics Shop on SAAS platform | ***Github*** ***Store*** ***Admin*** May 2023 – Present

- Developed the HackerSpace Electronics shop using technologies like **NodeJs, TypeScript, Next.js, React**, and the **Stripe** payment system for the **UBCO IEEE branch**
- Developed the HackerSpace Online Electronics Shop **full-stack Web App** using technologies **NodeJs, TypeScript, Next.js, React**, and the **Stripe** payment system for the **UBCO IEEE branch**
- Constructed the **Admin Client** with dashboards and a **User Client** which renders content using **REST APIs**. Designed both Clients with an interactive User Interface using **ShadcnUI** and **Tailwind**
- Constructed the **Admin Client** with dashboards and a **User Client**, rendering content using **REST APIs endpoints** and API services **Planetscale, Clerk OAuth and Cloudinary**. Designed both Clients with an interactive User Interface using **ShadcnUI** and **Tailwind**
- Drafted and implemented a robust **MySQL** database model with **11 tables** for efficient data storage on an **AWS instance** employing **Prisma** and **SQL queries**
- Led a **3-member team**, overseeing **meetings** and **task allocation**. Collaborated on **5 redesigns**, ensuring completion of the first version within established deadlines
- Managed a **5-member team**, overseeing **meetings** and **task allocation**. Collaborated on **5 redesigns**, ensuring completion of first version within established deadlines

IDS Solar Decathlon Design Challenge - Electrical Distribution Director Sep 2023 – June 2024

- Collaborated with multiple engineering disciplines to design a sustainable **single-unit smart 5-room home** in Ashcroft, BC, for an **international competition** aiming for a maximum **HERS score** of **40**
- Modeled and formulated a **Solar Photovoltaic & Grid interactive** power distribution circuit, incorporating the **Net Metering program** offered by BC Hydro. Resulted in nearly **100% net-zero home**
- Interpreted inner house **circuit schematics** and **drawings**, considering technical and geographical specifications of Ashcroft, BC in **REVIT**
- Ensured **safety measures**, adhering to electrical codes and performing **power efficiency calculations** based on **EAC 2021**

Self-Driven PiCar, UBC - Team Leader | ***Github*** Jan 2023 – Apr 2023

- Oversaw steering wheel angle prediction for **PiCar** on a test track, employing **Raspberry Pi 4** and **OpenCV** for real-time image-processing analysis and control
- Developed **balanced non-overfitting CNN model** in **Tenserflow**, achieving a Mean Squared Error (**MSE**) of $<$**0.4 (avg 70)** on a dataset of **5014** items, achieving lowest error in course competition

- Guided a team of **7 members**, organized **weekly meetings**, and addressed challenges to ensure an efficient workflow. **Debugged** program over **50 times/week on 7 different environments** to maintain functionality of model and interaction with PiCar
- Optimized model runtime by transferring code to **C++** focusing on **memory optimization** resulting in faster execution time by **30**%

Aircraft Carrier Design Project, UBC - Developer | *Github Youtube* Sep 2021 – Dec 2021

- Designed and engineered a customized aircraft fuselage based on **F-22** jet, integrating features from the **F-35** model, utilizing **SolidWorks** software for precise modeling and simulation
- Fabricated and installed high-performance **engine turbines** tailored to modified jet configuration, ensuring optimal power output and operational efficiency
- Conducted over **10 iterative re-scaling iterations** for each of **58 individual components** of aircraft, by refining dimensions and tolerances to achieve seamless integration and functionality throughout project lifecycle

The OX, UBC - Designer | *Youtube* Sep 2021 – Jan 2022

- Utilized SolidWorks to design an efficient and functional pushcart design tailored for firefighting needs
- Devised an independent suspension system to ensure smooth navigation with different approaches to each possible Canadian terrain
- Prepared cost management plan and marketing strategy for cart

Waste Recycling Project - Physics-Math State School FIZMAT | *Github* Sep 2020 – Mar 2021

- Trained and utilized face and bottle detection models as test objects for waste recycling process in school
- Developed dataset of 3000+ photos operating OpenCV and labeled with LabelMe library
- Secured funding of over 4000 USD from school council to support project by consulting and navigating between offers from 6 companies
- Rapidly adapted an existing object detection model in TensorFlow to align with project requirements within a tight deadline

Other projects | Present

- Based on Dbourke's Pytorch course developed 10 regression, classification, and CV models with customized databases with up to 20 different inputs with a minimum of 90% accuracy
- Devised 2 VPC on AWS and administrated infrastructure involving S3, EC2, Route 53, and Application Load Balancer. Composed and executed Virtual Pfsense+ Firewall/WAF
- Employed Selenium to gather data on job listings, and analyzed employment trends on the Apple Job Market platform
- More projects and lab work can be found on | *Github Skills: C++, Arduino, Assembly, Lab reports, etc.*