Petar Antovski

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EDUCATION

University of California Los Angeles
Bachelor of Science, Bioengineering **June 2018**

- Honors and awards: *Summa Cum Laude*, Dean's Honors List, Doshi Family Scholarship

Master of Science, Bioengineering **June 2020**

- Honors and awards: Dean's Scholar Award

CERTIFICATIONS

- IBM Data Science Professional Certificate
- IBM Applied Data Science Specialization
- IBM Data Science Fundamentals with Python and SQL Specialization
- IBM Data Analyst Professional Certificate
- IBM Data Analysis and Visualization Foundations Specialization
- ServiceNow Certified System Administrator

SKILLS

- Programming Languages: Javascript, Typescript, HTML, CSS, C++, Python, R, SQL
- Web Development: React, Firebase, Jest, NodeJs, NextJs, Puppeteer, Bootstrap, Git, Github
- Data Science and Analysis: Excel, SPSS, IBM Cognos, MySQL, Pandas, NumPy, SciPy, Matploplib, Seaborn, Scikit-learn, Scanpy, GSEApy, Dash, Git, Github, FlowJo, ServiceNow, PowerPoint
- Professional: Leadership, Teamwork, Public Speaking, Presenting, Scientific Writing
- Research: Nanoparticles, HPLC, Nanodrop, Zetasizer, Drug Delivery, Gene Editing, CRISPR, Fluorescence Microscopy, Cell Culture, Plasmid Design, Tissue Engineering, Cell Reprogramming, Regenerative Medicine, Exosomes, Mouse Models, FACS, Stem Cells, DNA and RNA isolation, RT-PCR, Single-cell RNA seq

PROJECTS

Credit Card Fraud Detection Using Machine Leaning **November 2022**

- Trained, optimized, and evaluated multiple classification models to predict credit card fraud.
- The 3 best models were stacked to create the best model with an accuracy of 0.999440.

Forecasting Rain Using Machine Learning **November 2022**

- Used nested cross validation to train, optimize using feature selection and hyperparameter tuning, and along with learning curves evaluate 12 different classification models to determine the best model for rain forecast.
- Combining the 3 best models using model stacking yielded the best model with an accuracy of 0.851067.

Simple Calculator React App **September 2022**

- Designed and built a simple calculator app focusing on React.js fundamentals.

Beauty Salon Home Page **August 2022**

- Designed a home page for a beauty salon using HTML and CSS.
- CSS pseudo classes and the transform and transition properties were used to add interactivity to the webpage.

HSPC Circadian Rhythm Gene Expression Variation **June 2022**

- Used Python to preprocess HSPC single cell RNA seq data with Multiple Nearest Neighbor batch correction, visualize the data using tSNE and UMAP, and perform differential gene expression analysis.
- Identified relevant pathway gene expression variation due to the circadian rhythm through GO analysis.

IL10 Expressing HSC Gene Expression Variation **December 2021**

- Used Scanpy to process and visualize HSPC scRNA-seq data and perform differential gene expression analysis.
- Performed GSEA and GO analysis to identify relevant pathway gene expression variation due to IL10 expression.

All projects I have designed can be viewed at https://petar-antovski.github.io/

PROFESSIONAL EXPERIENCE

RadicalX **Los Angeles, CA – (Remote)**

Full Stack Web Development Intern ***November 2022 - Present***

- Developed a RadicalX user portal in React for viewing current internships and adding new internship positions.
- Built and maintained a database in NodeJs and Firebase, which enables the client-facing side to display internship info data.
- Performed QA testing and implemented user handling errors.

Meta Nutrition Inc **Los Angeles, CA**

Software Engineer ***September 2022 - Present***

- Rebuilt, improved, and maintained company's website in React.
- Optimized the website's architecture and SEO by switching from client-side rendering to server-side rendering.
- Developed and maintained test suites for unit testing components and end to end testing using Puppeteer and Jest.

Eli and Edythe Broad Center for Regenerative Medicine & Stem Cell Research at USC **Los Angeles, CA**

Research Assistant ***January 2021 – September 2022***

- Formulated hypotheses and experimental plans and adjusted them based on results.
- Performed experiments including Stem cells isolation from mouse bone marrow, Flow cytometry and fluorescence-assisted cell sorting, Stem cell transplantation into mice, Weekly blood collection, Tissue collection, RNA isolation, and cDNA library generation.
- Performed single cell RNA sequencing data analysis, including data preprocessing, filtering, cell type annotation using transcription information, visualization, differential gene expression, gene ontology and gene set enrichment analysis using Python and R.

Valkyrie Therapeutics and Alacrity Care **Los Angeles, CA**

Research Consultant ***April 2020 – December 2020***

- Consulted on designing research projects and clinical trials concerning Cancer therapy, Skeletal muscle regenerative therapy, Antisense oligonucleotides, Cell penetrating peptides, Non-viral cell delivery.
- Designed laboratory research and clinical trial protocols.
- Contacted clinicians to describe company products and discuss collaboration efforts.

UCLA California NanoSystems Institute **Los Angeles, CA**

Junior Development Engineer ***July 2019 – December 2019***

Research Assistant ***November 2016 – June 2019***

- Formulated hypotheses and experimental plans and adjusted them based on results.
- Performed experiments including Nanoparticle synthesis and characterization, Cell culture, Bacterial culture, Exosome isolation and characterization, Immunocytochemistry, DNA and RNA isolation, and PCR analysis.
- Collected, cleaned, analyzed and visualized data and wrote weekly progress reports.
- Co-authored four research articles published in world renowned journals.

PUBLICATIONS

Materials Today Chemistry **2021**

Nanoengineering cellulose for removing chemotherapy drugs from blood

Small **2021**

Supramolecular Nanosubstrate-Mediated Delivery Strategy for CRISPR/Cas9 Gene Disruption and Deletion

Advanced Functional Materials **2020**

Synthetic Biology and Tissue Engineering: Toward Fabrication of Complex and Smart Cellular Constructs

ACS Nano **2018**

Cross-Linked Fluorescent Supramolecular Nanoparticles for Intradermal Controlled Release of Antifungal Drug—A Therapeutic Approach for Onychomycosis