

## Education

May 2024	<b>Purdue University</b> BSC, DATA SCIENCE & CYBERSECURITY · First Year, Fall 2021 Cumulative GPA - 3.55 / 4.00   Major GPA - 4.00 / 4.00 <b>Corporate Partnership: MISO (Fall 2021)</b> <ul style="list-style-type: none"><li>Developed a FCNN for outlier classification achieving .99735 field accuracy over contiguous executions.</li><li>Identified outliers were relegated to custom high-performance solve engines, minimizing bottleneck induced solve-time delays.</li></ul> <b>Relevant Courses:</b> CS180: Object Oriented Programming with Java, *CS527: Software Security, CS383: Python Programming, *CNIT180: Intro to System Development
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## Work Experience

Present	<b>The Data Mine @ Purdue University</b> TEACHING ASSISTANT · West Lafayette, IN 📍 Mentoring students under Purdue's Corporate Partner MISO, developing industry solution using Data Science. Duties also include grading assignments, and holding office hours.
Jul 2021	<b>Teachiq AB / exam.net</b> SYSTEM DEVELOPER · Remote 📍 Developed native Linux desktop applications for exam delivery service exam.net. <ul style="list-style-type: none"><li>Packaged custom security implementations by forking open source xmodmap(c) utility to a node.js module</li><li>Exploited the assessment kiosk on exam.net's web client.</li></ul>

## Current Research

2022*	<b>Identifying Cryptographic Functions from Pre-Compiled Binaries</b> Employing rudimentary techniques within NLP to establish a baseline approach for reconstructing cryptographic functions from disassembler code used to generate corresponding binaries.
2022*	<b>Rethinking Space-Time Networks with Improved Memory Coverage for Efficient Video Object Segmentation</b> Developing the Tensorflow Re-Implementation of STCN for Visual Object Segmentation, using information obtained from the open-source PyTorch code, additionally conducting supplementary experiments to expand the current scope of research.
2022*	<b>Drone Video Object Recognition</b> Within the Q Learning and Vision Lab under Prof. Qiang Qiu; developing systems for object recognition and tracking on OpenVINO accelerated IoT, participating in the RI4Rover 📄 challenge.

## Skills

<b>Programming Languages</b>	Python, C++, Java, Kotlin, Javascript, Bash, Assembly, Arduino, MATLAB, SQL
<b>Frameworks</b>	Tensorflow, Pytorch, scikit-learn, ROOT, Node.js, Vue.js, Electron, Docker, Kubernetes, Sagemaker
<b>Cloud Utilities</b>	CI/CD Scripting, Google Cloud Console (Compute, Networking, Storage), Amazon Web Services (Redshift), Azure Pipeline
<b>Development Utilities</b>	Gradle, Git, Jupyter Notebook, Google Colaboratory, MariaDB, NoSQL, PostgreSQL

## Publications

2021	<i>CutLang V2: Advances in a runtime-interpreted analysis description language for HEP data</i> , Frontiers in Big Data, 4, 27, Dr. Gökhan Ünel, et al. 📄 <ul style="list-style-type: none"><li>Developed CI/CD Scripting w/ Automated Email Delivery using GitHub Actions &amp; SendGrid</li><li>Developed Interpreter Functions through lexical analysis using Flex &amp; Bison (.cpp)</li></ul>	<b>CERN, Switzerland</b>
2020	<i>ArchiMeDe @ DankMemes: A New Model Architecture for Meme Detection</i> , Proceedings of the Seventh Evaluation Campaign of Natural Language Processing and Speech Tools for Italian. Final Workshop (EVALITA 2020), Jinen Setpal, Gabriele Sarti. 📄 <ul style="list-style-type: none"><li>Achieved .7664 F1-Score on test dataset (+.2466 baseline) w/ Video Presentation📄 during final workshop</li><li>Developed multimodal ensemble using transfer learning through AlexNet, DenseNet &amp; ResNet pre-trained networks</li></ul>	<b>EVALITA, Italy</b>

## Patents

2022*	<b>[Patent Pending]</b> <i>Semi-Supervised Class Activation Mappings for Target Localization &amp; Super-Resolution</i> , Jinen Setpal, et al. <ul style="list-style-type: none"><li>Developed a proprietary pipeline for PCB connector classification, integrated within a SaaS.</li><li>\$50,000 EST time savings for 500 different connector types.</li></ul>	<b>TE Connectivity</b>
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## Projects

2022	<b>Reproducibility Challenge: Panoptic-Deeplab</b> 📄 <ul style="list-style-type: none"><li>Developed multiheaded neural architecture for bottom-up panoptic segmentation trained on the cityscapes dataset using Tensorflow with Python.</li><li>Implemented shared encoder with dual ASPP and decoder modules based on Google's Deeplabv3 implementation.</li><li>Built training and evaluation pipelines with loss functions and callbacks described in the paper.</li></ul>	<b>Independent</b>
2021	<b>CheXNet for Pneumonia Diagnosis</b> 📄 <ul style="list-style-type: none"><li>Trained a DenseNet121 network on the ChestX dataset, creating a blind paper reproduction of Stanford's CheXNet.</li><li>Produced class activation heatmaps highlighting areas within affected lung scans.</li><li>Presented as the sign-up walkthrough for repository hosting service <a href="http://www.dagshub.com">www.dagshub.com</a>.</li></ul>	<b>DAGsHub</b>
2021	<b>Embedded Realtime Semantic Segmentation</b> 📄 <ul style="list-style-type: none"><li>Embedded DeeplabV3+ with a MobileNetsv3 backbone to Android using Java.</li><li>Established a data conversion pipeline (NV21 -&gt; YUV_420_888 -&gt; JPEG -&gt; Bitmap -&gt; TensorImage), and achieved an inference framerate of <math>\approx 25fps</math>.</li></ul>	<b>Independent</b>

## Outreach

2021	Special-Interest-Group AI @ Purdue	<b>Project Manager (x2)</b>
2021	b01lers CTF @ Purdue	<b>CTF Team</b>
2021	TEDxYouth @ RNPodar - Blindspots 📄	<b>Technical Lead</b>
2021	ACL Year-Round Mentorship	<b>Mentee</b>

## Cybersecurity Training

2020	<b>ECSA</b> - EC-Council Certified Security Analyst
2019	<b>CEH</b> - Certified Ethical Hacker

Note: \* = in progress