SIDDARTHA DEVIC

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EDUCATION

The University of Texas at Dallas *August 2017 - May 2021*
B.S. Pure Mathematics, Computer Science (Double Major) GPA: 3.97/4.0
CS^2 Computer Science Honors Program, Collegium V Interdisciplinary Honors Program

TECHNICAL SKILLS

Machine Learning Python, Tensorflow, Keras, PyTorch, OpenCV, sklearn
Programming & Software Java, C++, Linux, C#, C, vim, git, LaTeX, Unity3D, QT, MIPS

WORK & RESEARCH EXPERIENCE

Johns Hopkins Applied Physics Labs *Summer 2019*
Research Intern

- AI and machine learning research with the Machine Perception group in Tactical Intelligent Systems.
- Active secret clearance (2029) for classified defense projects dealing with object detection.
- Unclassified fundamental research project investigating deep active learning with "Accurate Layerwise Interpretable Confidence Estimation" (ALICE).
- Developed active learning framework for Keras and Pytorch; rapid prototyping of ML models.

Advanced Networks Research Lab *April 2018 - Present*
Student Researcher, UT Dallas

- Applied machine learning and convex optimization research under the guidance of Prof. Jason Jue.
- Agent-based recovery for networks with theory and reinforcement learning in graphs [preprint].
- Online convex optimization for regret bounds on the online progressive recovery problem in graphs.
- Inference-time failure resilient distributed neural networks using novel training techniques [preprint].

Markov Lab *October 2017 - Present*
Student Researcher, UT Dallas

- Fundamental machine learning research under the guidance of Prof. Nicholas Ruozzi.
- Iterative and stochastic convex function fitting with applications in reinforcement learning [poster].
- Piecewise linear convex hulls in kernel space for arbitrary function representation and minimization.
- Investigating maximum margin neural networks for improved generalization [blog][poster].

Future Immersive Virtual Environments Lab *Summer 2017*
Student Researcher, UT Dallas

- Novel method for physical object selection and representation in virtual reality [poster].
- Prototyped in Unity3D for the HTC VIVE headset as part of Clark research program for pre-freshman.

CONFERENCE & WORKSHOP PUBLICATIONS

Guardians of the Deep Fog: Resilient Distributed Neural Network Inference from Edge to Cloud. Ashkan Yousefpour*, **Siddartha Devic***, Brian Nguyen*, Alan Liao, Abdul Rahman Kreidieh, Alexandre M. Bayen, Jason P. Jue. *ACM AIChallengeIoT Workshop, 2019*

DeepPR: Incremental Recovery for Interdependent VNFs with Deep Reinforcement Learning. Genya Ishigaki, **Siddartha Devic**, Riti Gour, Jason P. Jue. *IEEE GLOBECOM, 2019.*

MANUSCRIPTS

DeepPR: Progressive Recovery for Interdependent VNFs with Deep Reinforcement Learning. Genya Ishigaki, **Siddartha Devic**, Riti Gour, Jason P. Jue. *Under review at IEEE Journal on Selected Areas in Communications (J-SAC) special issue on Machine Learning.*

POSTERS & TALKS

A Study of Points in Hypercubes *(Slides, UTD Problem Solving 2019)*

ALICE for Deep Active Learning *(Talk, Johns Hopkins Applied Physics Labs 2019)*

Failure-Resilient Distributed Deep Learning Inference *(Poster, Huawei Future Networks Summit 2019)*

Convex Functions for Reinforcement Learning *(Poster, UTD Undergraduate Research Contest, 2019)*

Robust Optimization with Applications in Networking *(Slides, UTD Graduate Seminar, 2019)*

A Reinforcement Learning based Approach to Networking *(Slides, UTD Graduate Seminar, 2019)*

Improving Generalization in Neural Networks Through Margin Maximization *(Poster, UTD, 2018)*

Digitally Representing Physical Objects for Collision Avoidance in VR *(Poster, Clark Program, 2017)*

ACADEMIC ACHIEVEMENTS

Undergraduate Research Scholar Award	*2018 - 2019*
Top 20 Intel Innovate FPGA 2018 (Semi-finalist, YOLO for traffic safety [writeup])	*2018*
School of Engineering Dean's List (Top 10%)	*4 of 5 Semesters*
UTD Academic Excellence Scholarship (Honors level)	*2017 - 2021*
Clark Summer Research Program (Participant & Advisor)	*2017, 2018*

STUDENT ACTIVITIES

ACM UTD Chapter President Lead the largest CS organization at UTD (1000+ Members). Organize a 40 person team that coordinates student-based semester long technical projects, mentorship programs, a 700+ person hackathon, funding for student startups, and industry talks. 8-10 hours/week.

Empower Through Code Organize and attend weekly STEM workshops for at-risk middle school girls in low income areas, exposing them to engineering and developing critical thinking. 2-3 hours/week.

RELEVANT COURSES (BY MAY 2020)

Graduate - Computational Geometry
Honors - Data Structures and Algorithms, Operating Systems, Computer Architecture, Differential Equations, Discrete Mathematics II, Automata Theory, Programming Languages, Digital Logic.
Normal - Advanced Algorithms, Machine Learning, Differential Geometry, Probability, Statistics, Abstract Algebra I, Mathematical Analysis I & II, Linear Algebra, Calculus I, II, & III.

SELECTED TECHNICAL PROJECTS

RuTroll, HackHarvard 2018 Developed chrome extension to highlight tweets likely to come from a Russian propaganda bot. Natural language processing classifier based on the 538 dataset [github].

Green Raccoon, EarthxHack 2018 Educational react-native mobile application which takes pictures of objects and determines if they are recyclable or not based on semantic heuristics [blog].