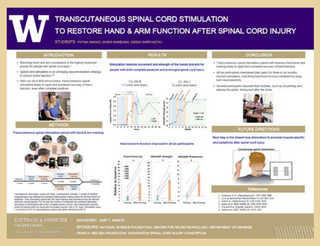
ELECTRICAL & COMPUTER ENGINEERING
UNIVERSITY of WASHINGTON

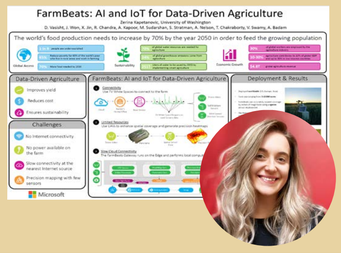
RESEARCH SHOWCASE 2021

TRANSCUTANEOUS SPINAL CORD STIMULATION TO RESTORE HAND AND ARM FUNCTION AFTER SPINAL CORD INJURY

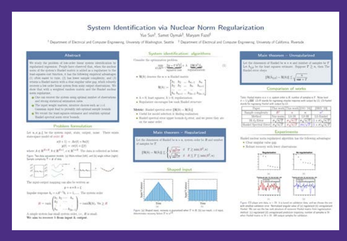


MEMS-ACTUATED METASURFACE ALVAREZ LENS

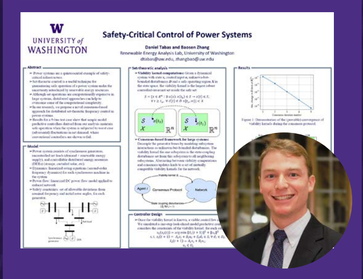
FARMBEATS: AI AND IoT FOR DATA-DRIVEN AGRICULTURE



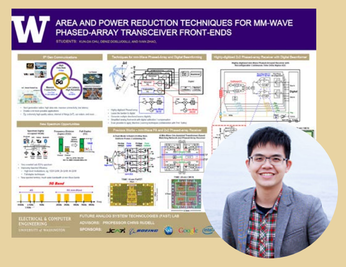
SYSTEM IDENTIFICATION VIA NUCLEAR NORM REGULARIZATION



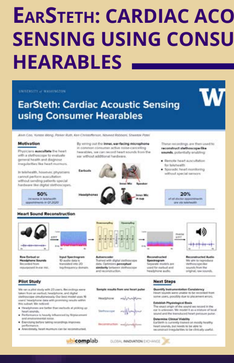
SAFETY-CRITICAL CONTROL OF POWER SYSTEMS



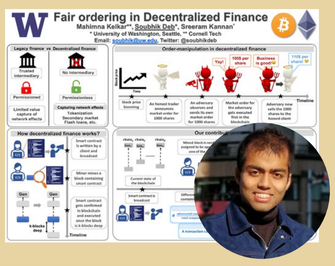
AREA AND POWER REDUCTION TECHNIQUES FOR MM-WAVE PHASED-ARRAY TRANSCEIVER FRONT-ENDS



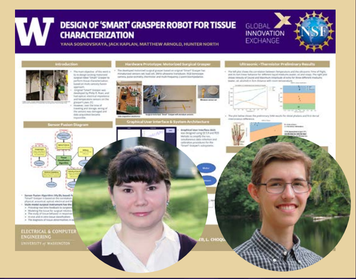
EARSTETH: CARDIAC ACOUSTIC SENSING USING CONSUMER HEARABLES



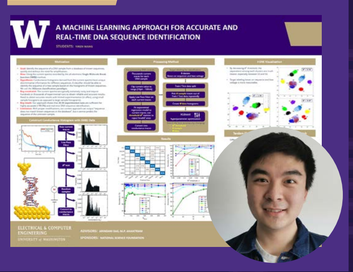
FAIR ORDERING IN DECENTRALIZED FINANCE



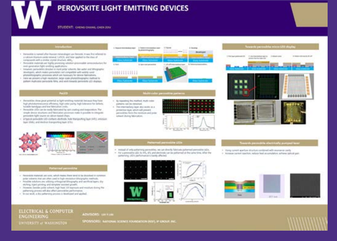
DESIGN OF 'SMART' GRASPER ROBOT FOR TISSUE CHARACTERIZATION



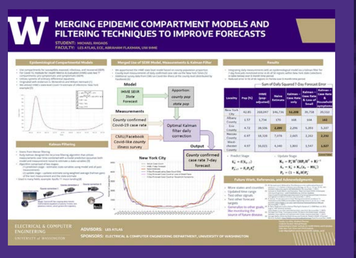
A MACHINE LEARNING APPROACH FOR ACCURATE AND REAL-TIME DNA SEQUENCE IDENTIFICATION



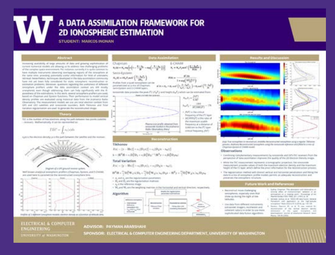
PEROVSKITE LIGHT EMITTING DEVICES



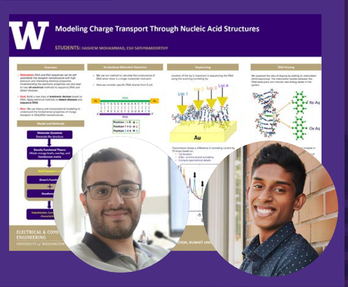
MERGING EPIDEMIC COMPARTMENT MODELS AND FILTERING TECHNIQUES TO IMPROVE FORECASTS



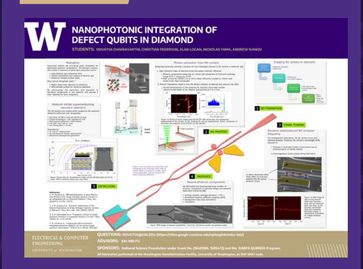
A DATA ASSIMILATION FRAMEWORK FOR 2D IONOSPHERIC ESTIMATION



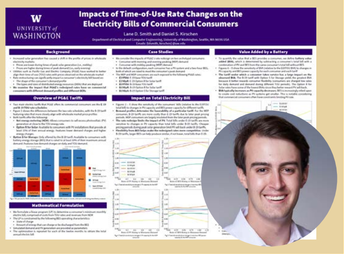
MODELING CHARGE TRANSPORT THROUGH NUCLEIC ACID STRUCTURES



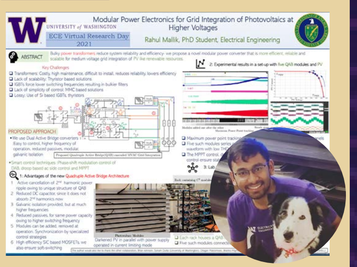
NANOPHOTONIC INTEGRATION OF DEFECT QUBITS IN DIAMOND



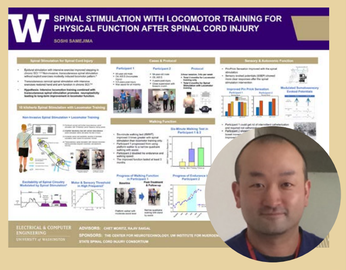
IMPACTS OF TIME-OF-USE RATE CHANGES ON THE ELECTRICITY BILLS OF COMMERCIAL CONSUMERS



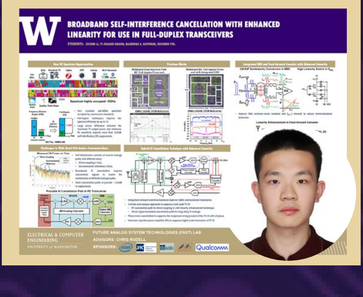
MODULAR POWER ELECTRONICS FOR GRID INTEGRATION OF PHOTOVOLTAICS AT HIGHER VOLTAGES



SPINAL STIMULATION WITH LOCOMOTOR TRAINING FOR PHYSICAL FUNCTION AFTER SPINAL CORD INJURY

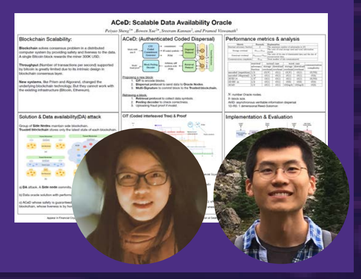


BROADBAND SELF-INTERFERENCE CANCELLATION WITH ENHANCED LINEARITY FOR USE IN FULL-DUPLEX TRANSCEIVERS

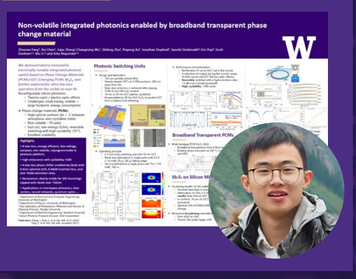


A CONVEX NEURAL NETWORK SOLVER FOR DCOPF WITH GENERALIZATION GUARANTEES

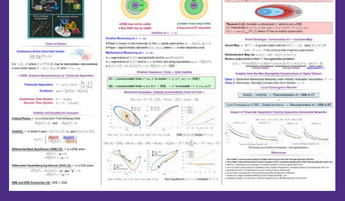
ACED: SCALABLE DATA AVAILABILITY ORACLE



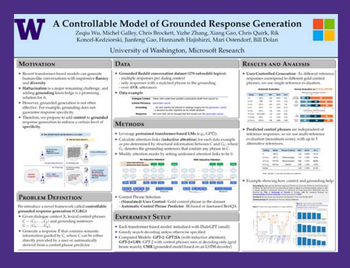
NON-VOLATILE INTEGRATED PHOTONICS ENABLED BY BROADBAND TRANSPARENT PHASE CHANGE MATERIAL



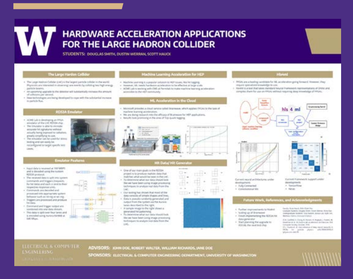
LOCAL CONVERGENCE ANALYSIS OF GRADIENT DESCENT ASCENT WITH FINITE TIMESCALE SEPARATION



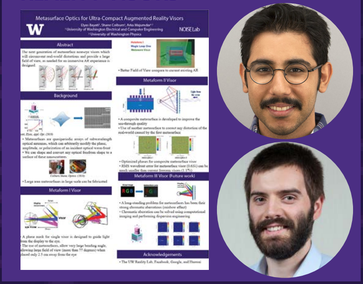
A CONTROLLABLE MODEL OF GROUNDED RESPONSE GENERATION



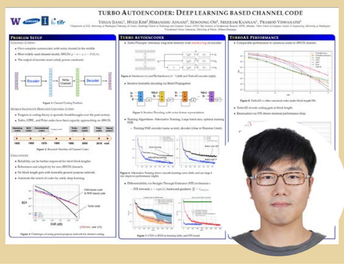
HARDWARE ACCELERATION APPLICATIONS FOR THE LARGE HADRON COLLIDER



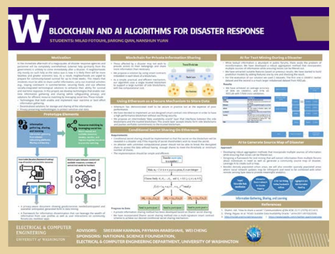
METASURFACE OPTICS FOR ULTRA-COMPACT AUGMENTED REALITY VISORS



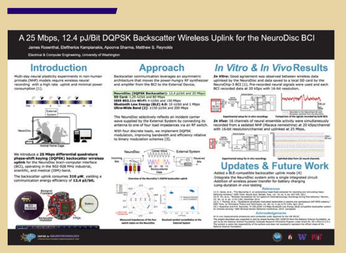
TURBO AUTOENCODER: DEEP LEARNING BASED CHANNEL CODE



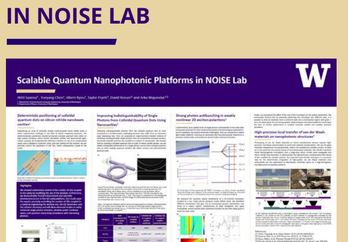
BLOCKCHAIN AND AI ALGORITHMS FOR DISASTER RESPONSE



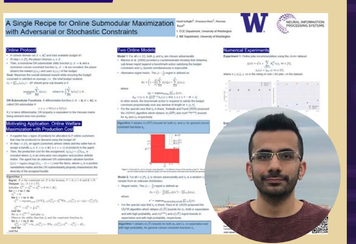
A 25 MBPS, 12.4 PJ/BIT DQPSK BACKSCATTER WIRELESS UPLINK FOR THE NEURODISC BCI



LARGE-SCALE MULTI-MODAL DURA FOR NON-HUMAN PRIMATES



A SINGLE RECIPE FOR ONLINE SUBMODULAR MAXIMIZATION WITH ADVERSARIAL OR STOCHASTIC CONSTRAINTS



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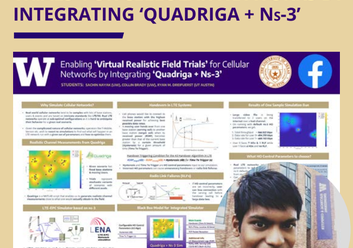
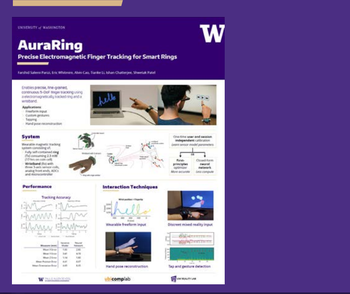
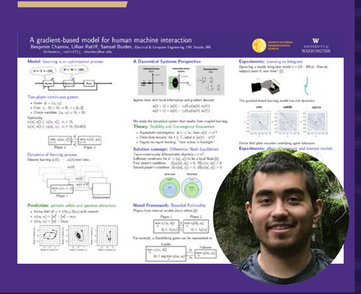


AURARING: PRECISE ELECTROMAGNETIC FINGER TRACKING FOR SMART RINGS

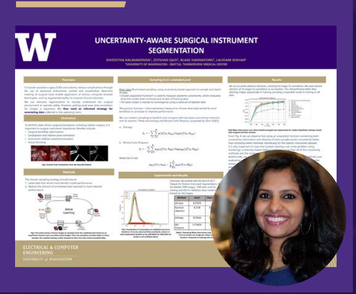


A GRADIENT-BASED MODEL FOR HUMAN-MACHINE INTERACTION



SCALABLE QUANTUM NANOPHOTONIC PLATFORMS IN NOISE LAB

UNCERTAINTY-AWARE SURGICAL INSTRUMENT SEGMENTATION



ENABLING 'VIRTUAL REALISTIC FIELD TRIALS' FOR CELLULAR NETWORKS BY INTEGRATING 'QUADRIGA + NS-3'

UNIVERSITY of WASHINGTON