Shourya Bose
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EDUCATION

1. **Ph.D. Electrical and Computer Engineering** **Sep 2020-**
   University of California Santa Cruz, California, USA
   - Part of Energy, Optimization & Data Analytics Lab with PI Dr. Yu Zhang.
   - Recipient of Chancellor's Fellowship. Completed my master's coursework with a 3.96 GPA and now focusing on research.
   - Studying the intersection of machine learning, optimization, and control theory for applications in electric power systems.
2. **B.E. Electrical and Electronics Engineering & M.Sc. Mathematics** **2014-2019**
   BITS Pilani Goa Campus, Goa, India
   - Graduated with a dual degree, B.E. in EEE and an M.Sc in Mathematics.
   - Spent last year of studies at Department of Electrical Engineering, Indian Institute of Science (IISc) for thesis.

WORK EXPERIENCE

1. **Givens Associate** **Jul 2023 - Present**
   Argonne National Laboratory, Illinois, USA
   - Researching distributed machine learning with privacy-protection of data.
   - Working with PyTorch model and the APPFL package.
2. **Project Associate** **Mar 2020 - Aug 2020**
   Indian Institute of Science, Bengaluru, India
   - Worked with the same group as the previous internsip.
   - Theoretical research led to publication of first-author article in IET Control Theory and Applications.
3. **Research Intern** **Jan 2019 - Feb 2020**
   Indian Institute of Science, Bengaluru, India
   - Worked as a part of the Control & Network Systems Group.
   - On the theoretical side, I explored the problem of event-triggered control in linear systems with unreliable communications. On the applied side, I simulated a multi-scale search algorithm for a UAV with downward pointing sensor in MATLAB (original work: Dr. S. Carpin, UCM).
4. **Research Intern** **Jan 2019 - Dec 2019**
   Pixxel, Bengaluru, India
   - Volunteered to do some orbital simulations to reckon number of satellites needed in constellation for parameters like coverage, revisit time, etc. Used AGI STK and NASA GMAT software, along with some post-processing in MATLAB.

PUBLICATIONS

1. "Unsupervised Deep Learning for AC Optimal Power Flow via Lagrangian Duality", K. Chen, **S. Bose** and Y. Zhang, *GLOBECOM 2022*, Link.
2. "Co-optimization of Battery Routing and Load Restoration for Microgrids with Mobile Energy Storage Systems", **S. Bose** and Y. Zhang, *IEEE PES-GM 2022*, Link.
3. "Differentially Private Load Restoration for Microgrids with Distributed Energy Storage", **S. Bose** and Y. Zhang, *IEEE ISGT 2022 NA*, Link.
4. "Load Restoration in Islanded Microgrids: Formulation and Solution Strategies", **S. Bose** and Y. Zhang, *Under review*, ArXiv Link.
   - Pre-publication manuscript received INFORMS Energy, Natural Resources and the Environment (ENRE) 2021 early-career best paper award.
5. "Event-Triggered Second-Moment Stabilisation under Action-Dependent Markov Packet Drops", **S. Bose** and P. Tallapragada, *IET Control Theory & Applications Vol. 15 No.7*, Link.
6. "Event-Triggered Second Moment Stabilization under Markov Packet Drops", **S. Bose** and P. Tallapragada, *Fifth Indian Control Conference, 2019*, Link.
7. "Numerical Solution for a System of Fractional Differential Equations with Applications in Fluid Dynamics and Chemical Engineering", B. Prakash, A. Setia and **S. Bose**, *International Journal of Chemical Reactor Engineering*, Link.

SKILLS

1. *Programming languages* Python (with pytorch), Matlab (and Simulink), C, x86 Assembly, LaTeX
2. *Description of Graduate Courses* Optimization & Economics of Power Systems, Machine Learning, Numerical & Convex Optimization, Control Theory & Optimal Control, Analysis of Algorithms
3. *Description of Undergrad Courses* Various abstract math & numerical computation courses, Various control, power electronics & systems courses, Electrodynamics
4. *Teaching* TA for CSE20 (Python programming), ECE30 (Engineering principles of electronics), ECE 13 (Computer Systems and C Programming Mentor for SIP 2021 & 2022
5. *Miscellaneous* Deep learning codes: https://github.com/shourya01/ml-notebooks

UNIVERSITY OF CALIFORNIA
SANTA CRUZ

***** U N O F F I C I A L *****

Name: **Bose, Shourya**
Student ID: **1851189**

Institution Info: University of California, Santa Cruz
1156 High Street
Santa Cruz, CA 95064

Degrees Awarded

Degree: Master of Science
Confer Date: 12/10/2021
Plan: MS in Electrical and Computer Engineering

Beginning of Graduate Record

2020 Fall Quarter

Program: Electrical & Computer Engineer
Plan: PhD in Electrical and Computer Engineering

Course		Description	Attempted	Earned	Grade	Points
AM	229	Convex Optimization	5.00	5.00	A+	20.000
ECE	240	LinearDynamicalSystem	5.00	5.00	A	20.000
ECE	253	Intro InformtnTheory	5.00	5.00	A	20.000
ECE	280Z	Smart Grids & Data	2.00	2.00	A+	8.000
GRAD	200	Academic Writing	0.00	0.00	S	0.000
GRAD	201	Oral Communication	0.00	0.00	S	0.000
GRAD	202	Reading & Research	0.00	0.00	S	0.000

Academic Standing Effective 12/23/2020: Good Standing

			Attempted	Earned	GPA Units	Points
Term GPA	0.00	Term Totals	17.00	17.00	17.00	68.000
Transfer Term GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined GPA	0.00	Comb Totals	17.00	17.00	17.00	68.000
Cum GPA	0.00	Cum Totals	17.00	17.00	17.00	68.000
Transfer Cum GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined Cum GPA	0.00	Comb Totals	17.00	17.00	17.00	68.000

2021 Winter Quarter

Program: Electrical & Computer Engineer
Plan: PhD in Electrical and Computer Engineering

Course		Description	Attempted	Earned	Grade	Points
AM	230	Numerical Optimiz	5.00	5.00	A	20.000
ECE	241	FeedbackContrlSystm	5.00	5.00	A	20.000
ECE	279	Opt/Control:PowerSys	5.00	5.00	A	20.000
ECE	280Z	Smart Grids & Data	2.00	2.00	A+	8.000

Academic Standing Effective 03/18/2021: Good Standing

			Attempted	Earned	GPA Units	Points
Term GPA	4.00	Term Totals	17.00	17.00	17.00	68.000
Transfer Term GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined GPA	4.00	Comb Totals	17.00	17.00	17.00	68.000
Cum GPA	4.00	Cum Totals	34.00	34.00	34.00	136.000
Transfer Cum GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined Cum GPA	4.00	Comb Totals	34.00	34.00	34.00	136.000

2021 Spring Quarter

Program: Electrical & Computer Engineer
Plan: PhD in Electrical and Computer Engineering

UNIVERSITY OF CALIFORNIA SANTA CRUZ

***** U N O F F I C I A L *****

Name: **Bose, Shourya**
Student ID: **1851189**

Course		Description	Attempted	Earned	Grade	Points
AM	232	Optimal Control	5.00	5.00	A+	20.000
ECE	275	Energy Market	5.00	5.00	B+	16.500
ECE	291	Tomorrow'sProfessor	3.00	3.00	S	0.000
ECE	297A	Independent Study	5.00	5.00	A+	20.000

Academic Standing Effective 06/08/2021: Good Standing

			Attempted	Earned	GPA Units	Points
Term GPA	3.76	Term Totals	18.00	18.00	15.00	56.500
Transfer Term GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined GPA	3.76	Comb Totals	18.00	18.00	15.00	56.500
Cum GPA	3.92	Cum Totals	52.00	52.00	49.00	192.500
Transfer Cum GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined Cum GPA	3.92	Comb Totals	52.00	52.00	49.00	192.500

2021 Fall Quarter

Program: Electrical & Computer Engineer
Plan: PhD in Electrical and Computer Engineering

Program: Electrical & Computer Engineer
Plan: MS in Electrical and Computer Engineering

Course		Description	Attempted	Earned	Grade	Points
CSE	242	Machine Learning	5.00	5.00	A+	20.000
ECE	280Z	Smart Grids & Data	2.00	2.00	S	0.000
ECE	290	ECE Graduate Seminar	2.00	2.00	S	0.000
ECE	297A	Independent Study	5.00	5.00	A+	20.000

Academic Standing Effective 12/08/2021: Good Standing

			Attempted	Earned	GPA Units	Points
Term GPA	4.00	Term Totals	14.00	14.00	10.00	40.000
Transfer Term GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined GPA	4.00	Comb Totals	14.00	14.00	10.00	40.000
Cum GPA	3.94	Cum Totals	66.00	66.00	59.00	232.500
Transfer Cum GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined Cum GPA	3.94	Comb Totals	66.00	66.00	59.00	232.500

2022 Winter Quarter

Program: Electrical & Computer Engineer
Plan: PhD in Electrical and Computer Engineering

Course		Description	Attempted	Earned	Grade	Points
CSE	201	Analysis Algorithms	5.00	5.00	A	20.000
ECE	280Z	Smart Grids & Data	2.00	2.00	A+	8.000
ECE	297B	Independent Study	10.00	10.00	A+	40.000

Academic Standing Effective 03/16/2022: Good Standing

			Attempted	Earned	GPA Units	Points
Term GPA	4.00	Term Totals	17.00	17.00	17.00	68.000
Transfer Term GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined GPA	4.00	Comb Totals	17.00	17.00	17.00	68.000
Cum GPA	3.95	Cum Totals	83.00	83.00	76.00	300.500
Transfer Cum GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined Cum GPA	3.95	Comb Totals	83.00	83.00	76.00	300.500

UNIVERSITY OF CALIFORNIA SANTA CRUZ

***** U N O F F I C I A L *****

Name: **Bose, Shourya**
Student ID: **1851189**

2022 Spring Quarter

Program: Electrical & Computer Engineer
Plan: PhD in Electrical and Computer Engineering

Course		Description	Attempted	Earned	Grade	Points
AM	231	Nonlinear Control	5.00	5.00	A+	20.000
ECE	297B	Independent Study	10.00	10.00	A+	40.000

Academic Standing Effective 06/10/2022: Good Standing

			Attempted	Earned	GPA Units	Points
Term GPA	4.00	Term Totals	15.00	15.00	15.00	60.000
Transfer Term GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined GPA	4.00	Comb Totals	15.00	15.00	15.00	60.000
Cum GPA	3.96	Cum Totals	98.00	98.00	91.00	360.500
Transfer Cum GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined Cum GPA	3.96	Comb Totals	98.00	98.00	91.00	360.500

2022 Fall Quarter

Program: Electrical & Computer Engineer
Plan: PhD in Electrical and Computer Engineering

Course		Description	Attempted	Earned	Grade	Points
ECE	280Z	Smart Grids & Data	2.00	0.00		0.000
ECE	299A	Thesis Research	5.00	0.00		0.000

			Attempted	Earned	GPA Units	Points
Term GPA	0.00	Term Totals	7.00	0.00	0.00	0.000
Transfer Term GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined GPA	0.00	Comb Totals	7.00	0.00	0.00	0.000
Cum GPA	3.96	Cum Totals	105.00	98.00	91.00	360.500
Transfer Cum GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined Cum GPA	3.96	Comb Totals	105.00	98.00	91.00	360.500

Graduate Career Totals

Cum GPA:	3.96	Cum Totals	105.00	98.00	91.00	360.500
Transfer Cum GPA		Transfer Totals	0.00	0.00	0.00	0.000
Combined Cum GPA	3.96	Comb Totals	105.00	98.00	91.00	360.500

Non-Course Milestones
Graduate Candidacy
Status: Completed
Program: Electrical & Computer Engineer

End of *** U N O F F I C I A L ***