Krishnendu Roy, Ph. D.

Curriculum Vitae

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Work Experience

07/2019–Present	**Department Head and Professor**, Dept. of Computer Science, Valdosta State University
07/2018–06/2019	**Department Head and Associate Professor**, Dept. of Computer Science, Valdosta State University
07/2016–06/2018	**Interim Department Head and Assoc. Prof.**, Dept. of Computer Science, Valdosta State University
08/2014–06/2016	**Associate Professor**, Dept. of Math & CS, Valdosta State University
08/2009–07/2014	**Assistant Professor**, Dept. of Math & CS, Valdosta State University

Education

2009	Ph.D. in Electrical (Computer) Engineering	Louisiana State University, Baton Rouge, LA
2005	M.S. in Electrical (Computer) Engineering	Louisiana State University, Baton Rouge, LA
2003	B.Tech. in Information Technology	University of Calcutta, Calcutta, India
2000	B.Sc. in Computer Science	University of Calcutta, Calcutta, India

Honors and Awards

2008	George Reymond Scholarship awarded by the Department of Electrical and Computer Engineering, LSU, for excellence in graduate studies.
2003	Certificate of Merit from University of Calcutta, Calcutta, India for securing the first rank in B.Tech course.
2000	National Scholarship from Ministry of Human Resource Development, Govt. of India, for securing the sixth position in B.Sc course.

List of Key Accomplishments as Department Head

Leadership

- Foster inclusiveness and collegiality
- Act as advocate for department
- Hire three tenure-track faculty
- Increase faculty diversity
- Advocate for faculty salary study
- Promote knowledge about the discipline
- Plan curriculum changes
- Plan assessment and accreditation
- Connect faculty to grant opportunities
- Help create new student organizations
- Mentor existing student organizations
- Coordinate student activities such as ICPC programming competition
- Create new events such as student-led discussion panel
- Guide department social media presence
- Advise community partners such as K-12 schools and technical colleges
- Create new community relationships

Administration

- Manage department budget
- Establish policies and procedures
- Create teaching schedule
- Generate various reports
- Assign committee work
- Organize department meetings
- Evaluate faculty members annually
- Conduct promotion/post-tenure reviews
- Determine merit raises
- Evaluate staff
- Hire and on-board staff
- Hire adjunct faculty
- Hire student workers
- Manage faculty travel
- Organize freshman orientation
- Handle grade disputes
- Nominate faculty/students for awards
- Handle faculty resignation

- Support faculty course release
- Approve time cards
- Create promotional items
- Attend student recruitment events
- Deal with student misconduct
- Handle registration wait-lists
- Attend various meetings
- Attend various public events

Resource Development

- Establish the new department
- Secure resources/supplies for new dept.
- Mentor junior faculty
- Raise funds for departmental foundation account
- Secure funds for student scholarships
- Secure funds for student travel
- Create budget requests for new FY
- Find internships for students
- Cultivate alumni relationships
- Cultivate industry relationships
- Cultivate K-12 relationships
- Secure equipment replacement funds

Teaching Experience

Valdosta State University

- CS 1000 - Intro. to Comp. Applications
- CS 1010 - Algorithmic Problem Solving
- CS 1301 - Principles of Programming I
- CS 1302 - Principles of Programming II
- CS 2620 - Discrete Structures
- CS 3200 - Computer Ethics
- CS 3300 - UNIX Programming
- CS 3335 - C Programming
- CS 3410 - Data Structures
- CS 3520 - Algorithms
- CS 4242 – Mobile Apps. Development
- CS 4330 - Theory of Prog. Languages
- CS 4500 – Formal Lang. and Aut. Theory
- CS 4990 - Spcl. Topics: Dig. Forensics

Louisiana State University (Teaching Assistant)

- ECE 2731 – Digital Logic Design Lab
- ECE 3751 – Microprocessors Lab

Scholarly Work

1. Kamriani, F. and Roy, K. (2016). *"App Inventor 2 Essentials"*. Packt Publishing Ltd.

2. Mihail, R. P. and Roy, K. (2016). "Closed Labs in Programming Courses: A Review". In: *Proceedings of the International Conference on Frontiers in Education: Computer Science and Computer Engineering (FECS)*, pp. 104.

3. Roy, K. (2015). "Position statement: App inventor instructional resources for creating tangible apps". In: *Blocks and Beyond Workshop*. IEEE, pp. 119–120.

4. Wang, M., Mao, G., Roy, K., and Drummond, D. (2014). "K-Means Clustering Using Mahalanobis Distance". In: *Proceedings of 2014 Southeastern INFORMS Conference*.

5. Chakraborty, S. and Roy, K. (2012). "An SLA-based framework for estimating trustworthiness of a cloud". In: *11th International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom)*. IEEE, pp. 937–942.

6. Roy, K. (2012). "App inventor for Android: report from a summer camp". In: *Proceedings of the 43rd ACM technical symposium on Computer Science Education*. ACM, pp. 283–288.

7. Roy, K., Rousse, W. C., and DeMeritt, D. B. (2012). "Comparing the mobile novice programming environments: App Inventor for Android vs. GameSalad". In: *Proceedings of Frontiers in Education Conference (FIE)*. IEEE, pp. 1–6.

8. Wang, A. and Roy, K. (2012). "On the Fairness of the Georgia Official Spelling Bee Rules". In: *Proceedings of 2012 Southeastern INFORMS Conference*.

9. Roy, K., Vaidyanathan, R., and Trahan, J. L. (2008). "Input-queued switches with logarithmic delay: necessary conditions and a reconfigurable scheduling algorithm". In: *Proceedings of the 4th ACM/IEEE Symposium on Architectures for Networking and Communications Systems*. ACM, pp. 121–122.

10. Roy, K., Vaidyanathan, R., and Trahan, J. L. (2006). "Routing multiple width communications on the circuit switched tree". *International Journal of Foundations of Computer Science, vol. 17 no. 02*, 271–285.

11. Roy, K., Vaidyanathan, R., and Trahan, J. L. (2005). "Configuring the circuit switched tree for multiple width communications". In: *Proceedings of the 19th IEEE International Parallel and Distributed Processing Symposium, 2005*. IEEE.

12. Dhar, S., Roy, K., and Kannan, R. (2004). "NEC: Node Energy Based Clustering Protocol for Wireless Sensor Networks with Guaranteed Connectivity". In: *1st Int'l. Conf. on Distributed Computing and Internet Technology (ICDCIT)*. Springer Verlag, pp. 75–84.

13. Roy, K., Trahan, J. L., and Vaidyanathan, R. (2004). "Configuring the Circuit Switched Tree for Point-to-Point and Multicast Communication". In: *Proceedings of the IASTED Conference on Parallel and Distributed Computing and Systems (PDCS)*.

Invited Talk

- "App Inventor for Android in VSU Computing Summer Camps," presented at App Inventor Summit at Massachusetts Institute of Technology, Cambridge, MA, July 2012.

Grants

2014	K. Roy. "Valdosta Computes v2.0." *Funding from Google CS4HS.*	$12,500
2013	K. Roy. "Valdosta Computes." *Funding from Google CS4HS.*	$12,000
2012	K. Roy. "Android Devices for Research/Education (9 Android phones)." *Funding from Google.*	In-kind
2011	Z. Xu. and K. Roy. "CUDA Teaching Center." *Funding from NVIDIA.*	In-kind
2011	K. Roy. "Computing Adventures @ VSU." *Funding from Georgia Computes NSF BPC Grant, Georgia Institute of Technology.*	$4,999
2011	S. Chakraborty and K. Roy. "An Analytical Model for Estimating the Trustworthiness of a Cloud." *Funding from VSU FRSG.*	$7,500
2011	K. Roy. "Computing Summer Camps for Middle and High Schools Students." *Funding from VSU Strategic Focus Initiative.*	$13,659
2010	K. Roy. "Computing Adventures @ VSU." *Funding from Georgia Computes NSF BPC Grant, Georgia Institute of Technology.*	$4,999

Outreach Activities

Instructor: Lenovo Scholars Network, 2016–present

- Project is funded by Lenovo and organized by National Academies Foundation and MIT (`https://lsn2021.devpost.com`).

- Organized bi-monthly workshop for teachers and trained them on how to create apps using MIT App Inventor.

- This program has directly impacted 5000 high school students across 21 states.

Camp Director: Computing Adventures @ VSU, 2010–2016, 2019

- Organized a total of 14 one-week-long summer camps for elementary/middle/high school students.

- Served more than 260 students, many from groups underrepresented in CS.

- Students introduced to computing through innovative activities such as Scratch, Lego Mindstorms NXT robots, and App Inventor.

Instructor: Cyber Patriots Summer Camp, 2018

- Instructed JFROTC students from Lowndes High School and Colquitt High School during the Cyber Patriots Summer Camp in July 2018.

Advisor: Lowndes High School Cyber Patriots Team, 2017–2018.

- Mentor the Lowndes High School Team participating in Cyber Patriots competition.

Instructor: Valdosta Middle School STEM Academy Summer Camp, 2017

- Organized a week-long summer camp for 52 students of VMS STEM Academy.
- Students introduced to computing through Android app creation using App Inventor.

Verizon Innovative App Challenge, 2013–2017

- Trained one of the teams that won the Verizon Innovative App Challenge in App Inventor and advised them during the implementation of their idea.

Co-Organizer: Hackathon sponsored by Azalea Health, 2014–2019

- Organized a day-long Hackathon for VSU CS and CIS majors. This event was sponsored by Azalea Health, Inc.

Co-Organizer: Adventures in Math & Computer Science, Science Saturday Program, 2012–2014

- Organized a Science Saturday for local school students.
- Various Math/CS-related activities showcased to 70 participants.

Advisor: Valdosta School District Robotics Program, 2013–2015

- Organized monthly after-school workshops for 15 teachers from 5 local schools.

Director: Valdosta Computes v 1.0/2.0 CS4HS Workshop, 2012–2013

- Workshop for local in-service teachers.
- Participants exposed to various computing and programming activities involving Lego Mindstorms NXT robots, App Inventor for Android, and Scratch.
- 15 teachers from 13 different schools participated in the workshop.

Advisor: Lanier County 4H Robotics Team, 2013–2014

- Coached the 4-H robotics team for the First Lego League robotics competition.

Team Coach: ACM Regional Programming Contest, 2009

- Coached three teams that participated in the contest in Savannah, GA.
- Co-organized local programming contest.

Media Coverage of Outreach Activities

Print

- "Robots powered by STEAM" by Thomas Lynn, *Valdosta Daily Times*, June 14, 2019.
- "STEM Camp: Students get techy, learn to build apps" by John Stephen, *Valdosta Daily Times*, July 29, 2017.
- "VSU hosts Computing Adventure" *Valdosta Daily Times*, Jul 6, 2016.
- "Bartlett High School students invent 'Fittastick' App" by Katlyn Smith, *Chicago Daily Herald*, April 5, 2014.
- "Computer scientist develops love of teaching" by Stuart Taylor, *Valdosta Daily Times*, March 31, 2014.
- "Camp encourages students to consider careers in computer science" by Malynda Dorsey, *Valdosta Daily Times*, August 4, 2013.
- "VSU wraps up computer science workshop" by Malynda Dorsey, *Valdosta Daily Times*, July 30, 2013.
- "Use Google, Work for Google, Create New Google. The Evolution of Teen Tech Trend" by *Brittany McClure, Valdosta Daily Times*, July 29, 2012.
- "VSU hosts summer computer camp" by David. S. Rodock, *Valdosta Daily Times*, May 4, 2012.
- "VSU hosts Computing Summer Camp" by David. S. Rodock, *Valdosta Daily Times*, April 14, 2011.
- "VSU computer science Summer Camp" by Paul Leavy, *Valdosta Daily Times*, June 29, 2010.
- "VSU aims to lure middle, high schoolers this summer" by Johnna Pinholster, *Valdosta Daily Times*, June 10, 2010.

Television

- "Camp Teaches Kids to Build Smartphone Apps," WCTV Channel 6 (CBS) Evening News at 5, June 21, 2011. YouTube link to the news clip: `http://www.youtube.com/watch?v=6QarnWgdx10&feature=share&list=PLC81EDA01343ED4D4`
- "VSU Host Hi-Tech Week for Kids," WCTV Channel 6 (CBS) Evening News at 5, June 16, 2011. YouTube link to the news clip: `http://www.youtube.com/watch?v=suieWBp5p8k&feature=share&list=PLC81EDA01343ED4D4`

Workshops and Training Conducted

- Instructor, App Inventor Workshop for K-12 Teachers in Naf-NeXT Conference, 2016-present.

- K. Nagel, S. Dunton, and K. Roy. "How to Plan, Run Computing Summer Camps – Logistics," in 47th ACM SIGCSE Technical Symposium on Computer Science Education, Seattle, March 2017.

- Instructor, How to Plan and Run Summer Computing Camp Workshop for K-12 Teachers, in WeTeach_CS Summit, Center for STEM Education, University of Texas at Austin, June 2016.

- Instructor, App Inventor Workshop for K-12 Teachers, in WeTeach_CS Summit, Center for STEM Education, University of Texas at Austin, June 2016.

- B. Ericson, K. Nagel, N. Napier, and K. Roy. "How to Plan and Run Summer Computing Camps – Logistics," in 46th ACM SIGCSE Technical Symposium on Computer Science Education, Memphis, March 2016.

- M. Doman, B. Ericson, K. Nagel, N. Napier, and K. Roy. "How to Plan and Run Summer Camps – Logistics," in 45th ACM SIGCSE Technical Symposium on Computer Science Education, Kansas City, March 2015.

- Advisor/Curriculum Developer, App Inventor Program, National Academy Foundation, October–November 2014.

- Instructor, App Inventor Workshop for AAUW Tech Trek Camp Instructors, American Association of University Women (AAUW), June–July 2014.

- Instructor, App Inventor Workshop for K12 Teachers, Network for Teaching Entrepreneurship (NFTE), New York, July 2014.

- Instructor, App Inventor Workshop, Broadening Advanced Technological Education Connections (BATEC) Summer Institute, Boston, August 2014.

- B. Ericson, C. Michaud, X. Xu, and K. Roy. "Projects for Computing Summer Camps for 4th-12th grade Students," 44th ACM SIGCSE Technical Symposium on Computer Science Education, Atlanta, March 2014.

- B. Ericson, C. Michaud, N. Napier, and K. Roy. "How to Plan and Run Computing Summer Camps for 4th-12th Grade Students," 43rd ACM SIGCSE Technical Symposium on Computer Science Education, Denver, March 2013.

Advisory Board Service

- Member, Board of Trustees, Valwood School, 2017–2020.

- Member, Advisory Committee, Lowndes High School Career, Technical, & Agricultural Education, 2016–present.

- Member, Advisory Board, VMS STEM Academy, 2016–present.

- Member, Advisory Board, VSU STEAM Center, 2016–present.

- Member, Advisory Committee, Wiregrass Georgia Technical College, 2013–2016.

Service to the Discipline

- Member, International Conference on Computational Thinking Education Program Committee, 2018.

- Reviewer for Journal of Parallel and Distributed Processing (JPDC), 2017–2018.

- Member, Blocks and Beyond 2 Workshop Program Committee, 2017.

- External evaluator, Promotion Committee for Ms. Ankur Suri, Lecturer of Computer Science, University of Washington at Tacoma, 2017.

- Reviewer, Governor's Office of Student Achievement (GOSA) grants, 2016.

- Panelist, NSF grant review, 2015.

- Member, IEEE EduPar Workshop Program Committee, 2016.

- Reviewer for ACM SIGCSE Conference, 2012–2016.

- Reviewer for ACM ITiCSE Conference, 2012–2015.

- Reviewer for IEEE Frontiers in Education, 2012.

Selected service to the Department/University

- Department Head of Mathematics Search Committee, Chair, 2018, 2022.

- Dean of College of Science and Mathematics Search Committee, 2017–2018. 2018-2019.

- Member, VSU Data Governance Committee, 2017–2018.
- Provost and VPAA Search Committee, 2016–2017.
- AVP of Student Affairs and Dean of Students Search Committee, 2016–2017.
- Council of Dept. Heads Subcommittee on Dept Head Evaluations, 2016–2017.
- Member, BoR Advisory Committee on Computing Disciplines, 2016–present.
- STEAM Center Director Search Committee, 2015–2016, 2016–2017.
- CS Search Committee, 2009–2010, 2011–2012, 2012–2013 (chair), 2013–2014.

Memberships in Professional Associations

- Member, Association of Computing Machinery (ACM).
- Member, ACM Special Interest Group in Computer Science Education (SIGCSE).