

Christopher J Harris

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Goal	Return to the <i>industrial sector</i> , to create new products or improve existing ones, whether the target entity involves material, equipment, software, or humans.																	
Profile	<p><i>Chemical Engineer</i> with over 20 years of graduate research in the semiconductor realm seeking to redefine opportunity:</p> <table><tr><td>crystal growth</td><td>plasma chemistry</td><td>computer modeling</td></tr><tr><td>surface science</td><td>laser excitation</td><td>python language</td></tr><tr><td>chemical vapor deposition</td><td>optical characterization</td><td>statistical analysis</td></tr><tr><td>molecular beam epitaxy</td><td>electrochemical methods</td><td>process control</td></tr><tr><td>semiconductor devices</td><td>applied neuroscience</td><td>laboratory automation</td></tr></table>			crystal growth	plasma chemistry	computer modeling	surface science	laser excitation	python language	chemical vapor deposition	optical characterization	statistical analysis	molecular beam epitaxy	electrochemical methods	process control	semiconductor devices	applied neuroscience	laboratory automation
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semiconductor devices	applied neuroscience	laboratory automation																
Literature	<p><i>Real-time Monitoring of Surface Processes by P-polarized Reflectance</i>, J. of Vacuum Science & Technology: 1997, A15, 807.</p> <p><i>Molecular Layer Epitaxy by Real-time Optical Process Monitoring</i>, Applied Surface Science: 1997, 112, 38.</p> <p><i>Boron Incorporation in Hydrogenated Amorphous Silicon Films Prepared by Chemical Vapor Deposition</i>, J. of Noncrystalline Solids: 1987, 97, 1419.</p> <p><i>Laser-induced Chemical Vapor Deposition of Hydrogenated Amorphous Silicon: Photovoltaic Devices and Material Properties</i>, Solar Cells: 1987, 21, 177.</p>																	
Milestone	<p>Invent a new approach for process control to optimize laser power.</p> <p>Write a Pascal based data acquisition program for DOS environment in 1986, long before LabView enters the Windows market.</p> <p>Analyze optical signals from a ceramic powder reaction chamber, leading to a computer monitoring scheme, which replaces a human operator.</p> <p>Construct interferometer to measure film thickness, providing a realtime signal, to calibrate growthrate.</p> <p>Refine process control loop to stabilize laser power, producing a steady deposition rate with reliable material properties.</p> <p>Collect in-situ stress measurements of growing films, through deflection of an optical laser, as sample curvature evolves.</p> <p>Grow the first laser-induced, chemical vapor deposition, amorphous silicon solar cell.</p> <p>Develop a microwave plasma, chemical vapor deposition system, to create polycrystalline diamond from methane gas, in a regime where kinetics dominates over thermodynamics.</p> <p>Achieve a unique ellipsoidal plasma advantageous for film growth over spherical plasmas.</p> <p>Monitor the surface evolution of compound semiconductor heterostructure films, in a chemical beam epitaxy system, with plane polarized reflectance spectroscopy.</p> <p>Design a radio frequency nitrogen plasma source for GaN film growth.</p> <p>Measure substrate temperature derived from plane polarized reflectance.</p> <p>Apply cyclic voltammetry to find: catalytic activity in gold compounds for methanol oxidation, and electrochemiluminescence in a ruthenium compound for DNA analysis.</p>																	
Experience	<p><i>Engineering Consultant</i>, Communo: Philadelphia, PA (1/18 to present)</p> <p><i>Research Assistant</i>, Maine Chemistry Dept: Orono, ME (8/03 to 5/06)</p> <p><i>Research Assistant</i>, NCSU Materials Science Dept: Raleigh, NC (1/87 to 5/99)</p> <p><i>Research Specialist</i>, MIT Advanced Energy Materials Lab: Cambridge, MA (11/84 to 1/87)</p>																	
Education	MS <i>Physical Chemistry</i> MS <i>Material Science</i> BS <i>Chemical Engineering</i> HS <i>Diploma</i>	Rutgers: New Brunswick, NJ North Carolina State: Raleigh, NC Texas A&M: College Station, TX Waltham High: Waltham, MA	Jan 2003 unofficial May 1984 Jun 1979															
Honor	<p><i>Bausch & Lomb Science Award</i></p>																	



DECEMBER 10, 2014

Statement of Accomplishment

WITH DISTINCTION

CHRISTOPHER HARRIS

HAS SUCCESSFULLY COMPLETED GEORGIA INSTITUTE OF TECHNOLOGY'S ONLINE OFFERING OF



Computational Investing, Part I

This course covers computational aspects of investing, including: Company valuation, the Capital Assets Pricing Model, Efficient Markets Hypothesis, the role of information in pricing, historical data and its manipulation, portfolio performance assessment and optimization.

TUCKER BALCH, PH.D.
ASSOCIATE PROFESSOR
COLLEGE OF COMPUTING
GEORGIA INSTITUTE OF TECHNOLOGY

NELSON BAKER, PH.D.
DEAN, PROFESSIONAL EDUCATION
GEORGIA INSTITUTE OF TECHNOLOGY

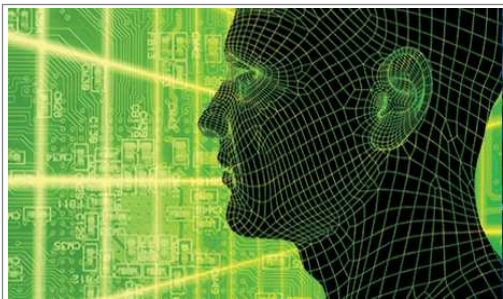
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JULY 02, 2015

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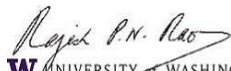
CHRISTOPHER HARRIS

HAS SUCCESSFULLY COMPLETED THE ONLINE OFFERING OF



Computational Neuroscience

This advanced undergraduate course introduces a broad range of computational techniques for analyzing, modeling, and understanding the behavior of neurons and networks of neurons in the brain.


W UNIVERSITY of WASHINGTON

DR. RAJESH P. N. RAO
PROFESSOR
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
UNIVERSITY OF WASHINGTON


W UNIVERSITY of WASHINGTON

DR. ADRIENNE FAIRHALL
ASSOCIATE PROFESSOR
DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS
UNIVERSITY OF WASHINGTON

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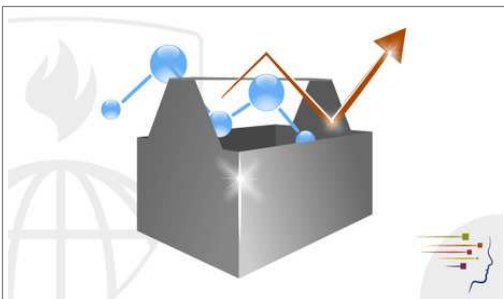
MARCH 08, 2015

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HAS SUCCESSFULLY COMPLETED THE JOHNS HOPKINS UNIVERSITY'S OFFERING OF



The Data Scientist's Toolbox

Overview of the data, questions, & tools that data analysts & scientists work with. It is a conceptual introduction to the ideas behind turning data into knowledge as well as a practical introduction to tools like version control, markdown, git, GitHub, R, and RStudio.

JEFFREY LEEK, PHD
DEPARTMENT OF BIostatISTICS, JOHNS HOPKINS
BLOOMBERG SCHOOL OF PUBLIC HEALTH

ROGER D. PENG, PHD
DEPARTMENT OF BIostatISTICS, JOHNS HOPKINS
BLOOMBERG SCHOOL OF PUBLIC HEALTH

BRIAN CAFFO, PHD, MS
DEPARTMENT OF BIostatISTICS, JOHNS HOPKINS
BLOOMBERG SCHOOL OF PUBLIC HEALTH

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MAY 07, 2015

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CHRISTOPHER HARRIS

HAS SUCCESSFULLY COMPLETED



Programming for Everybody (Python)

The Programming for Everybody (#PR4E) course from the University of Michigan School of Information introduces students to the Python programming language and studies how Python can be used to do data analysis.

A handwritten signature in black ink, appearing to read "Charles", followed by a horizontal line.

CHARLES SEVERANCE
CLINICAL ASSOCIATE PROFESSOR, SCHOOL OF INFORMATION
UNIVERSITY OF MICHIGAN

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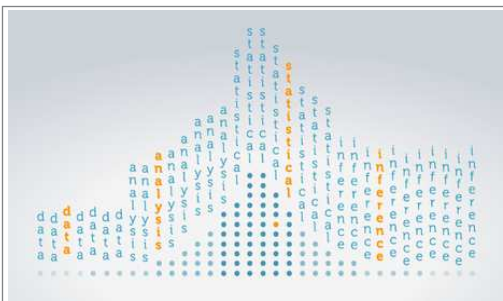
MAY 19, 2015

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WITH DISTINCTION

CHRISTOPHER HARRIS

HAS SUCCESSFULLY COMPLETED AN ONLINE NON-CREDIT COURSE OFFERED BY DUKE UNIVERSITY.



Data Analysis and Statistical Inference

This course introduces students to core statistical concepts such as exploratory data analysis, statistical inference and modeling, and basic probability, as well as statistical computing.

DR. MINE ÇETINKAYA-RUNDEL
ASSISTANT PROFESSOR OF THE PRACTICE
STATISTICAL SCIENCE, DUKE UNIVERSITY