Christopher J Harris

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http://cjharris.tk/
cjharris@alumni.rutgers.edu

Goal

Create new products or improve existing ones, whether the target entity involves material, equipment, software, or humans.

Profile

Chemical Engineer with over 20 years of semiconductor research and 10 years of data science seeking to redefine opportunity in the *industrial sector*:

crystal growth	plasma chemistry	gene therapy
surface science	laser excitation	applied neuroscience
chemical vapor deposition	optical characterization	computer modeling
molecular beam epitaxy	electrochemical methods	statistical analysis
semiconductor devices	additive manufacturing	process control

Thesis

Real Time Reflectometry of Ga–based Compound Semiconductor Films on Silicon during Plasma Enhanced Molecular Beam Epitaxy, NCSU Materials Science Dept: **1999**.

Character

Clifton Strengths

Strategic	faced with any given scenario, can quickly spot the relevant patterns.
Learner	have a great desire to learn and want to continuously improve.
Ideation	able to find connections between seemingly disparate phenomena.
Futuristic	inspired by the future and what could be.
Self-Assurance	possess an inner compass yielding confidence in decision making.

Milestone

Invent a new approach for process control to optimize laser power.

Write a Pascal based data acquisition program for DOS environment in 1986, long before LabView enters the Windows market.

Analyze optical signals from a ceramic powder reaction chamber, leading to a computer monitoring scheme, which replaces a human operator.

Construct interferometer to measure film thickness, providing a realtime signal, to calibrate growthrate.

Refine process control loop to stabilize laser power, producing a steady deposition rate with reliable material properties.

Collect in-situ stress measurements of growing films, through deflection of an optical laser, as sample curvature evolves.

Grow the first laser-induced, chemical vapor deposition, amorphous silicon solar cell.

Develop a microwave plasma, chemical vapor deposition system, to create polycrystalline diamond from methane gas, in a regime where kinetics dominates over thermodynamics.

Achieve a unique ellipsoidal plasma advantageous for film growth over spherical plasmas.

Design a radio frequency nitrogen plasma source for GaN film growth.

Monitor the surface evolution of compound semiconductor heterostructure films, in a chemical beam epitaxy system, with plane polarized reflectance spectroscopy.

Derive substrate temperature from plane polarized reflectance intensity.

Apply cyclic voltammetry to find: catalytic activity in gold compounds for methanol oxidation, and electrochemiluminescence in a ruthenium compound for DNA analysis.

Experience

Engineering Consultant, Independent (1/18 to present)
Futures Trader, Independent (9/06 to present)
Research Assistant, Maine Chemistry Dept: Orono, ME (8/03 to 5/06)
Research Assistant, NCSU Materials Science Dept: Raleigh, NC (1/87 to 5/99)
Research Specialist, MIT Advanced Energy Materials Lab: Cambridge, MA (11/84 to 1/87)

Education

MS *Physical Chemistry*	Rutgers: New Brunswick, NJ	Jan 2003
MS *Material Science*	North Carolina State: Raleigh, NC	unofficial
BS *Chemical Engineering*	Texas A&M: College Station, TX	May 1984
HS *Diploma*	Waltham High: Waltham, MA	Jun 1979

Honor

Bausch & Lomb Science Award

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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.

UNIVERSITY of WASHINGTON

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

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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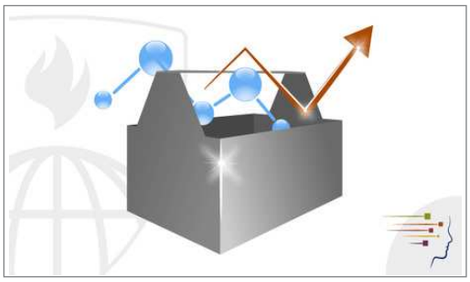

The Data Scientist's Toolbox

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

Statement of Accomplishment

WITH DISTINCTION

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.

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

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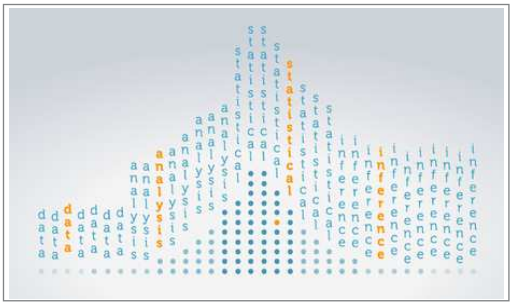
MAY 19, 2015

Statement of Accomplishment

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