

Alona Furmanchuk, PhD

Center for Health Information Partnership,
Northwestern University, Feinberg School of Medicine
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Summary 4 years of data mining, supervised and unsupervised machine learning, predictive analytics, visualization and analysis of big data sets • Experienced in design of high performance materials, medical informatics, database design and architecture of patient's data, familiarity with multi institution health data standards • 5 + years of experience in leading and executing scientific projects • Successful collaboration with various academic institutions and companies • 8 years of experience with successful execution of projects and reporting to CDC, NSF, NIH, the U.S. Army Research Laboratory, the US Army Research Office, DARPA • Published 20 research and review articles in the peer reviewed high impact factor scientific journals.

Professional Experience *Northwestern University*, Center for Health Information Partnerships, *Chicago IL*
Research Associate 2016-Now
Lead database design and architecture of nation-wide multi institutional data registry for the Next-D project. • Participated in writing research proposals • Studied effect of Affordable Care Act on health outcomes of diabetes patients; developed clinical sub-phenotypes for Atopic Dermatitis; worked on patterns of re-hospitalization for heart failure patients • 2 accepted poster presentations in AMIA.

Northwestern University, Department of Electrical Engineering and Computer Science, *Evanston IL*
Research Associate 2015-2016
Applied machine learning to study properties of thermoelectric materials • Designed and deployed user-friendly web applications for discovery of new thermoelectric materials • Lead and executed scientific projects • Designed and supervised students research projects • Participated in writing research proposals • Published 2 articles + 1 in progress.

Northwestern University, Department of Chemistry, *Evanston IL*
Research Associate 2012-2015
As a member of multi-site consortium developed novel nanomaterials • Applied high performance computing for analysis of non-stationary big data sets • Studied interactions between components in nanomaterial composites • Developed method for user-friendly visualization of 3D patterns in materials • Published 7 articles; presented research at multiple conferences.

Jackson State University, Interdisciplinary Center for Nanotoxicity, *Jackson, MS*
Postdoctoral Fellow, *Supervisor: Jerzy Leszczynski* 2010-2011
Developed analytical equations for linking the 3D shape of nanowires with their mechanical response • Simulated water-assisted proton transfer in DNA nucleobases, and its role in DNA mutations • Published 4 articles.

Education Ph.D. in Chemistry 2010
Jackson State University, Jackson, MS
M.S. in Chemistry 2002
Dnipropetrovsk State University, Dnepropetrovsk, Ukraine

Technical skills **Programming, statistic, databases:** R, SAS, STATA, Python, Shell, Perl, MATLAB, ORIGIN, MathCAD, MySQL, MS SQL server, UNIX, HTML, JAVA, WEKA
Visualization: Adobe Photoshop, Movie maker, Adobe Premier, Video Match
Computational: Gaussian, CPMD, CP2K, ReaxFF, DFTB+, VASP, ADF, NAMD, Tinker, Amber, LAMMPS, VMD, ChemCraft, GaussView, HyperChem, Material Studio, ChemOffice

Resent Awards ACS Physical Chemistry Division Postdoctoral Research Award 2015
Exemplary Doctoral Scholar, 2010