

LOUIS LICAMELE

[Please visit louis.licamele.com for contact information]

Senior executive with R&D experience in academia and the pharmaceutical industry. Expertise in bioinformatics and algorithm design with a focus on using genetics and genomics to personalize medicine. Unique background that blends genetics, bioinformatics and computer science combined with an applied understanding of situational leadership allows for the ability to successfully guide a cross functional team into the future of personalized medicine. Experience overseeing complete process of multiple whole genome association studies, from statistical analysis plan development to the analysis of biomarkers for predicting the optimal benefit-to-risk ratio of patients.

EDUCATION:	University of Maryland, College Park <i>PhD Graduate Student in Computer Science</i> <i>Advisor: Dr. Lise Getoor</i> <i>Research Areas:</i> Machine Learning, Bioinformatics, Data Mining, Statistical Relational Learning	College Park, MD Expected 8/09
	University of Maryland, College Park <i>Master of Science in Computer Science, GPA 3.9/4.0</i> <i>Relevant Courses:</i> Algorithms in Biosequence Analysis, Computational Gene Finding, Statistical Relational Learning, Database Management Systems, Information Visualization, Natural Language Processing, P2P Systems, Semantic Web & Web Services	College Park, MD
	Georgetown University <i>Bachelor of Science, Double Major: Computer Science and Biology</i> <i>Senior Thesis:</i> A comparative genomic analysis of <i>Giardia lamblia</i> in search of translation initiation factors <i>Relevant Courses:</i> Biology, Chemistry, Organic Chemistry, Genetics, BioChem, Cell Biology, Bioinformatics, Molecular Evolution, Math Methods in Biology, BioEthics, Data Structures, Algorithms, Intro C++, Advanced Programming, JAVA, Artificial Intelligence, Linear Algebra, Databases, Advanced Datamining Applications	Washington, DC
	RESEARCH AND EXPERIENCE:	
Vanda Pharmaceuticals, Inc. <i>Sr. Director, Head of Informatics</i> <ul style="list-style-type: none">Senior executive involved in determining strategic direction of the companyResponsible for oversight of personnel, projects and budget within Bioinformatics, IT, Infrastructure, Clinical Data Management and Biostatistics functionsReduced budget by over 60% while increasing level of supportAdditionally involved in key Business Development activitiesActing Chief Information Security Officer and was responsible for Sarbanes-Oxley compliance <i>Associate Director, Computational Research and Development</i> <ul style="list-style-type: none">Oversaw all computational research and development activities across bioinformatics, marketing, and clinical functionsDeveloped next generation drug discovery systemServed as an advisor on methods for statistical and knowledge discovery tasksActively involved in Clinical Data Plan developments, especially Statistical Analysis Plans <i>Bioinformatics Scientist (Senior Scientist)</i> <ul style="list-style-type: none">Designed and executed a plan for Whole Genome Analysis in search of genetic markers for efficacy and safety of therapeutic agentsBuilt a pipeline to automatically process, load, QC and analyze genotype dataImplemented an innovative platform for comparing gene expression profilesUsed machine learning to select the best genetic markers to be used as a diagnostic tool	Rockville, MD 6/06-Present	
The Licamele Group, LLC <i>President / CEO</i> <ul style="list-style-type: none">Founding member of a strategic bioinformatics and data mining consulting firmProvided leadership in the development of the company's vision and the corresponding strategies, plans, and budgets to achieve themDeveloped cutting edge drug discovery engine	Gaithersburg, MD 3/08-Present	
Department of Computer Science, University of Maryland <i>Graduate Research Assistant</i> <ul style="list-style-type: none">Invited to participate in Entity Resolution Challenge by IBM and finished second in several tasks out of over 80 submissionsDeveloped a novel interactive tool for visually inspecting social networks and resolving duplicate references; analyzed on Pubmed/Medline dataset among othersBuilt a custom distributed computing environment to be used by the research groupCreated a mechanism to label links on the web with ontological information while following HTML specifications set forth by the W3C	College Park, MD 6/04-6/06	

- Composed methodology to perform link mining across NCBI databases and predict novel links
- Formalized the notion of social *capital* and performed an analysis on the DBLP dataset demonstrating its predictive power
- Researching subpopulation detection using haplotype information
- Applied relational learning techniques to the problem of predicting protein-protein interactions and statistically improved upon previous methods
- Formalized the notion of indirect similarity and evaluated this novel measure in the context of gene expression profile similarity, showing specifically that it is more robust to experimental noise
- Established supervised method for creating gene expression group profiles based on labeled annotations; demonstrated the ability of this method to predict the therapeutic action of a drug

Vanda Pharmaceuticals, Inc.**Rockville, MD***Bioinformatics Scientist*

7/03-8/04

- Assisted in the design of database schemas and oversaw database migrations
- Brought bioinformatics applications (e.g. BLAST) in house to retain privacy, and customized the application parameters to meet the needs of the scientists
- Developed data parsing and database loading applications
- Performed a custom analysis to select the best oligos (genome-wide) for rat genotyping

Pharmacogenomics Group, Novartis Pharmaceuticals, Inc.**Gaithersburg, MD***Bioinformatics Engineer*

5/02-7/03

- Developed a clustering program in Matlab and subsequently in Java (using RMI)
- Used Matlab to create a program that analyzes Gene Expression data and detects biomarkers for disease classification

Department of Biology, Georgetown University**Washington, DC***Research Scientist/Senior Thesis: Advisor – Dr. Steven Singer*

1/03-5/04

- Performed a comparative genomic analysis of *Giardia* in search of translation initiation factors
- Adapted known molecular models of eIF4E for the possible homologs found in *Giardia*
- Built phylogenetic trees for eIF4E in order to better understand its evolution

Department of Computer Science, Georgetown University**Washington, DC***Research Assistant: Dr. Lisa Singh*

1/04-12/04

- Implemented known algorithms for mining of streaming data
- Assisted in development, implementation, and evaluation of new mining algorithms
- Helped to investigate algorithms for pruning social networks

Department of Computer Science, Georgetown University**Washington, DC***System Administrator*

4/03-5/04

- Responsible for setup, security and maintenance of two separate computer laboratories
- Laboratories consisted of 30 computers running both Windows XP and Linux

Department of Neurology, Georgetown Medical Center**Washington, DC***Howard Hughes Research Fellow: Dr. Josef Rauschecker*

5/01-9/01

- Researched specialization of audio cortex in Rhesus Monkeys.
- Facilitated in training of primates for neurophysiological research
- Manipulated MRI data for scientific review and future experimental design
- Reengineered NIH Cortex software for data acquisition and experimental control

Psychiatric Research Department, Georgetown Medical Center**Washington, DC***Research Assistant*

5/99-9/99

- Aided in oversight of clinical drug trial for evaluating Paxil for the PTSD indication
- Assisted in organization and gathering of necessary funds for annual Mood and Anxiety Disorders Conference

**TEACHING
EXPERIENCE:****Department of Computer Science, University of Maryland****College Park, MD***Teaching Assistant: Software Engineering (CMSC-435) – Dr. Jim Purtilo*

8/04-1/05

- Prepared and delivered half of the lectures as well as graded projects
- Served as the manager in charge of overseeing three teams, each with their own project manager that I met with weekly.
- Acted as the industry liaison for three real world clients for the projects listed below:
 - Developed a real time deployment application used by Maryland Task Force One (MDTF1) Urban Search and Rescue Team that allows emergency response teams to be set up in less than 5 minutes, a task which previously took up to 8 hours. This software has been proposed to be used as the standard for deployment for all search and rescue teams nationwide. <http://seam.cs.umd.edu/Collapse/04fall/index.php>
 - Created a system to allow for the distribution, acknowledgement, and remote access of directives needed by MCPD officers. This required both a tracking system to comply with the law as well as the ability to work in the mobile PCs used in patrol cars. <http://seam.cs.umd.edu/Forms/MainTOC.html>
 - Built a web based application for the college counselors of the Lab School of Washington in order to track the application progress of students as well as to provide a mechanism to suggest compatible colleges for each student based on their individual needs. <http://seam.cs.umd.edu/LabSchool/>

Department of Computer Science, Georgetown University*Teaching Assistant: Information Assurance (COSC-352) – Dr. Clay Shields*

- Assisted in development of syllabus and design of projects for the class
- Handled evaluation of student knowledge and acted as an aid in review of materials

Washington, DC

1/04-5/04

Department of Computer Science, Georgetown University*Teaching Assistant: Comp. Sci. I (Programming in C++) – Dr. Mark Maloof / Dr. Lisa Singh*

- Consulted one-on-one with students for review and enhancement of class material
- Responsible for grading projects and evaluating students

Washington, DC

1/02-5/03

Department of Computer Science, Georgetown University*Teaching Assistant: Comp. Sci. II (Advanced topics in C++) – Dr. Brian Blake*

- Utilized as a supplementary teacher for classroom exercises
- Responsible for grading projects and proctoring exams

Washington, DC

1/02-5/03

PUBLICATIONS:

Louis Licamele, Lise Getoor. A Method for the Detection of Meaningful and Reproducible Group Signatures from Gene Expression Profiles. Under Review.

Louis Licamele, Lise Getoor. Two-Sided Relative Ranking: A Robust Indirect Similarity Measure for Gene Expression Data. Under Review.

Simona Volpi, Louis Licamele, Christian Lavedan. Effect of polymorphisms in the dopamine receptor 2 gene on iloperidone efficacy for the treatment of patients with schizophrenia. Under Review.

Simona Volpi, Steven Potkin, Anil Malhotra, Louis Licamele, Christian Lavedan. Applicability of a genetic signature for enhanced iloperidone efficacy in the treatment of schizophrenia. To Appear in Journal of Clinical Psychiatry.

Mihael H. Polymeropoulos, Louis Licamele, Simona Volpi, Eugene D. Carstea, Lise Getoor, Shruti N. Mitkus, Christian Lavedan. Fatty Acid Synthesis at the Core of Antipsychotics Action Supports a Lipid Hypothesis for Schizophrenia. Schizophrenia Research 2009.

S Volpi, C Heaton, K Mack, JB Hamilton, R Lannan, CD Wolfgang, L Licamele, MH Polymeropoulos and C Lavedan. Whole genome association study identifies polymorphisms associated with QT prolongation during iloperidone treatment of schizophrenia. Molecular Psychiatry 2008.

C Lavedan, L Licamele, S Volpi, J Hamilton, C Heaton, K Mack, R Lannan, A Thompson, CD Wolfgang and MH Polymeropoulos. Association of the NPAS3 gene and five other loci with response to the antipsychotic iloperidone identified in a whole genome association study. Molecular Psychiatry 2008.

Hyunmo Kang, Lise Getoor, Ben Shneiderman, Mustafa Bilgic, and Louis Licamele. Interactive Entity Resolution in Relational Data: A Visual Analytic Tool and Its Evaluation. IEEE Transactions on Visualization and Computer Graphics.

Louis Licamele and Lise Getoor. Predicting Protein-Protein Interactions Using Relational Features. University of Maryland Technical Report. CS-TR-4909. March 2008.

Louis Licamele and Lise Getoor. Social Capital in Friendship-Event Networks. IEEE International Conference on Data Mining (ICDM). December 2006.

Louis Licamele and Lise Getoor. Social Capital in Friendship-Event Networks. University of Maryland Technical Report. CS-TR-4828. September 2006.

Mustafa Bilgic, Louis Licamele, Lise Getoor and Ben Shneiderman. D-Dupe: An Interactive Tool for Entity Resolution in Social Networks, IEEE Transactions on Visualization and Computer Graphics Special Issue on Visual Analytics. October 2006.

Indrajit Bhattacharya, Louis Licamele and Lise Getoor. Query-Time Entity Resolution, Proceedings of the 2006 ACM SIGMOD International Conference on Knowledge Discovery and Data Mining. August 2006.

Indrajit Bhattacharya, Louis Licamele and Lise Getoor. Relational Clustering for Entity Resolution Queries. ICML Workshop on Statistical Relational Learning (SRL). June 2006

Louis Licamele and Lise Getoor. Predicting Protein-Protein Interactions Using Relation Features. ICML Workshop on Statistical Relational Learning (SRL). June 2006

Lisa Singh, Lise Getoor and Louis Licamele. Pruning Social Networks Using Structural Properties and Descriptive Attributes, International Conference on Data Mining. New Orleans, LA. November, 2005.

Mustafa Bilgic, Louis Licamele, Lise Getoor and Ben Shneiderman. D-Dupe: An Interactive Tool for Entity Resolution in Social Networks, Poster at 13th International Symposium on Graph Drawing. Limerick, Ireland. September 2005.

Louis Licamele, Mustafa Bilgic, Lise Getoor and Nick Roussopoulos. Capital and Benefit in Social Networks, 11th ACM SIGKDD Workshop on Link Discovery: Issues, Approaches and Applications (LinkKDD-2005). Chicago, IL. August 2005.

ABSTRACTS:

Louis Licamele, Nan Wang, Christian Lavedan. A novel method to detect runs of homozygosity. ASHG 2008.

Simona Volpi, Louis Licamele, Kendra Mack, Callie Heaton, Jennifer Hamilton, Rebecca Lannan, Curt Wolfgang, Christian Lavedan. Specificity Of Genetic Markers Associated With Iloperidone Enhanced Efficacy Response In Patients With Schizophrenia. APA 2008.

Louis Licamele, Simona Volpi, Callie Heaton, Kendra Mack, Rebecca Lannan, Jennifer Hamilton, Curt Wolfgang, Christian Lavedan. Identification Of Genetic Markers Associated With Efficacy Of Iloperidone. APA 2008.

C. Heaton, K. Mack, S. Volpi, J. Hamilton, R. Lannan, C. Wolfgang, L. Licamele, M. Polymeropoulos, C. Lavedan. Whole-genome association study identifies polymorphisms in the CERKL gene associated with QT prolongation during iloperidone treatment of patients with schizophrenia. ASHG 2007.

S. Volpi, C. Heaton, K. Mack, L. Licamele, I. Holt, J. Hamilton, R. Lannan, C. Wolfgang, M. Polymeropoulos, C. Lavedan. Pharmacogenomic analysis shows differences between markers associated with responses of two atypical antipsychotics, iloperidone and ziprasidone, in the treatment of patients with schizophrenia. ASHG 2007.

L. Licamele, S. Volpi, C. Heaton, K. Mack, R. Lannan, J. Hamilton, I. Holt, C. Wolfgang, M. Polymeropoulos, C. Lavedan. Pharmacogenomic study of iloperidone treatment in patients with schizophrenia identifies markers associated with efficacy. ASHG 2007.

C. Lavedan, S. Volpi, K. Mack, C. Heaton, R. Lannan, J. Hamilton, L. Licamele, C. Wolfgang, M. Polymeropoulos. Whole-genome association study identifies polymorphisms in the NPAS3 gene associated with super-response to iloperidone treatment in patients with schizophrenia. ASHG 2007.

Lise Getoor and Louis Licamele. Link Mining for the Semantic Web Position Statement. Machine Learning for the Semantic Web, Dagstuhl Seminar. Dagstuhl, Germany. February 2005.

INVITED TALKS:

Drug discovery and personalized medicine: The future of informatics within the pharmaceutical industry. Invited speaker for the Tech Council of Maryland on Healthcare IT Committee meeting. February 2009.

Two-Sided Relative Ranking: A Robust Indirect Similarity Measure for Gene Expression Data. The University of Maryland Center for Bioinformatics and Computational Biology Seminar. March 2008.

Capital and Benefit in Social Networks. Greater Philadelphia DB/IR Day. Phila., PA. October 2005.

PATENTS:

D-Dupe: A Visual Interface for Relational DeDuplication. Submitted August 2006.

Multiple provisional patents surrounding personalize medicine and drug discovery.

AWARDS:

- Attendee of 48th Annual Short Course in Medical and Experimental Mammalian Genetics 2007 at The Jackson Laboratory.
- UMD Dean's Fellowship award
- Recipient of the Georgetown University Computer Science Medal (Top graduating student in Computer Science)
- Howard Hughes Biology Research Fellow
- John Carroll Scholar for Overall Achievement
- John Carroll Fellow
- Georgetown University Bellarmine Scholar for Academic Achievement at a Jesuit High School
- National Society for Collegiate Scholars Member
- Nominated to be inducted into Sigma Xi

PROFESSIONAL MEMBERSHIPS:

- Sigma Xi Associate Member – The Scientific Research Society
- ACM Member
- IEEE Member
- Science/AAAS Member
- ISCB Member

SKILLS:

Technical Skills: Proficient in - Windows NT, 2000, XP, UNIX/Linux, Macintosh OS / OS X.
Applications include – MS Office, MS Visio, MS Project, CVS, Emacs

Programming: C, C++, Java, Perl, SQL, Assembly, LISP, HTML, XML, R, SAS

Databases: Oracle, MySQL, MS-SQL, MonetDB

Bioinformatics: Blast, PSI-Blast, Blast2Seq, ClustalW, PAUP*, HMMER, BioEdit, Structure, etc.

Bio Algorithms: Z-Boxes, Knuth-Morris-Pratt, Karp-Rabin Fingerprints, Keyword Trees, Suffix Trees, Sequence Alignment using Dynamic Programming.

Laboratory Skills: Preparation of Buffers, Running gel electrophoresis, SDS PAGE