

# Eric Yang

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## Summary

- Data Scientist specializing in data visualization and application development for the pharmaceutical biotech industries

## Technical Skills

- **Programming:** C++, C#, Objective-C, Python, HTML, SQL, GAMS, R, MATLAB, Node.js, CouchDB, HBase, Hadoop
- **Distributed Systems:** High Performance Distributed Programming with MPI
- **Data Visualization:** D3.js, Tableau, RShiny

## Working Experience

- **Covance Inc.** **Princeton, PA**  
**2013-Current**  
*Associate Director of Data Sciences*
  - Demonstrate the utility of data collected by Labcorp/Covance for clinical trial planning and Real World Evidence
- Technical Lead for the Clinical Data Warehouse
  - Designed a HBase/Apache Phoenix Data Store allowing for schema flexibility while retaining SQL querying capability for cross trial analysis
- Technical Lead for Xcellerate Knowledge Base: Optimizing Country/Site Selection for Clinical Trials
  - Solution identifies highest performing clinical sites for use in clinical trials
  - Finds most cost effective distribution of countries and sites that meet sponsor timeline requirements
- Project Lead for Statistical Monitoring of Clinical Sites
  - Utilizes advanced statistical methods and machine learning to look for data anomalies in ongoing clinical trials

## Johnson & Johnson

*Senior Scientist*

**Spring House, PA**  
**2010-2013**

- Developed Synchronization Framework For the Analysis and Conduct of Clinical Trials in Alzheimer's Disease
  - Greatly increases the ability to identify statistically significant treatment effect in AD trials
  - Can demonstrate statistically significant treatment effect in prior failed trials
- Supported Secondary Analysis of Bapineuzumab Clinical Trials
  - Applied synchronization framework to identify the most likely subpopulation to show treatment effect
  - Evaluated clinical endpoints for sensitivity in a mild to moderate population
- Part of the Internal Biomarkers Working group to assess blood based markers for AD
  - Independently evaluated vendor data for diagnostic signal
- Clinical Data Management for Project Quaker
  - Allowed for the integration of datasets from multiple sources, (ADNI, AIBL, UPenn, UCL and internal trial data) for cross trial analysis
- Published 7 Papers in the AD Field

## Education

- **Rutgers, The State University of New Jersey** **Piscataway, NJ**  
*Ph.D., Biomedical Engineering (GPA: 3.855/4.000)* **2004 - 2008**
- **Johns Hopkins University** **Baltimore, MD**  
*BS in Biomedical Engineering/Computer Science (GPA 3.3/4.0)* **1999-2003**

## Peer Reviewed Journal Publications and Conference Proceedings

1. Samtani, M.N., N. Raghavan, Y. Shi, G. Novak, M. Farnum, V. Lobanov, T. Schultz, **E. Yang**, A. DiBernardo, V. Narayan, Alzheimer's Disease Neuroimaging Initiative. "Disease progression model in subjects with mild cognitive impairment from the Alzheimer's disease neuroimaging initiative: CSF biomarkers predict population subtypes." *British Journal of Pharmacology* (2013)
2. Ye J., M. Farnum, **E. Yang**, R. Verbeeck, V. Lobanov, N. Raghavan, A. DiBernardo, V. Narayan, "Sparse learning and stability selection for predicting MCI to AD conversion using baseline ADNI data." *BMC Neurology*(2012)
3. Raghavan N, M.N. Samtani, M. Farnum, **E. Yang**, G. Novak, M. Grundman, V. Narayan, A. DiBernardo; Alzheimers Disease Neuroimaging Initiative. "The ADAS-Cog revisited: Novel composite scales based on ADAS-Cog to improve efficiency in MCI and early AD trials." *Alzheimer's and Dementia* (2012)
4. Schultz T., **E. Yang**, M. Farnum, V. Lobanov, R. Verbeeck, N. Raghavan, M.N. Samtani, G. Novak, Y. Shi, V. Narayan, A. DiBernardo. "A novel subject synchronization clinical trial design for Alzheimer's disease." *Journal of Alzheimer's Disease* (2012)
5. Grundman M. **E. Yang**, A. DiBernardo. "Is there a rationale for including only patients already being treated with acetylcholinesterase inhibitors in a prodromal AD trial?" *J Nutr Health Aging* (2012)
6. Samtani, M.N., M. Farnum, V. Lobanov, N. Raghavan, **E. Yang**, A. DiBernardo, V. Narayan, Alzheimer's Disease Neuroimaging Initiative. "An improved model for disease progression in patients from the Alzheimer's disease Neuroimaging Initiative." *Journal of Clinical Pharmacology* (2012)
7. Liu P, D.K. Agrafiotis, D.N. Rassokhin, **E. Yang**. "Accelerating chemical database searching using graphics processing units (GPUs)". *J. Chem. Inf. Model* (2011)
8. **Yang E.**, P. Liu, D.N. Rassokhin, D.K. Agrafiotis. "Stochastic proximity embedding on graphics processing units (GPUs) taking multidimensional scaling to a new scale". *J. Chem. Inf. Model.* (2011)
9. **Yang E.**, M. Farnum, V. Lobanov, T. Schultz, R. Verbeeck, N. Raghavan, M.N. Samtani, G. Novak, V. Narayan, A. DiBernardo, Alzheimer's Disease Neuroimaging Initiative, "Quantifying the pathophysiological timeline of Alzheimer's disease", *Journal of Alzheimer's Disease* (2011)
10. Tung, N.T., **E. Yang**, and I.P. Androulakis, "Machine Learning in Gene Promoter Identification", *Machine Learning Research Program*, NOVA Science Publishers (2008)
11. Foteinou, P.T., **E. Yang**, and I.P. Androulakis, "Networks, Biology and Systems Engineering: A Case study in Inflammation", *Proceedings of the 5th International Conference on Foundations of Computer Aided Process Operations (FOCAPO)*, Cambridge, MA (July 2008)
12. **Yang, E.**, K. King, M.L. Yarmush and I.P. Androulakis, Extraction of Transcriptional Signaling Networks via Globally Optimal Biclustering. *Proceedings of the 5<sup>th</sup> International Conference of the Foundations of Computer-Aided Process Operations (FOCAPO)*, Cambridge, MA (2008)
13. **Yang, E.**, T.J. Maguire, M.L. Yarmush, F. Berthiaume and I.P. Androulakis, Identification of Regulatory Mechanisms of the Hepatic Response to Thermal Injury. *Comp. Chem. Eng.*, 32(1):356 (2008)
14. **Yang, E.**, R.R. Almon, D.C. Dubois, W.J. Jusko and I.P. Androulakis, Extracting Global System Dynamics of Corticosteroid Genomic Effects in Rat Liver. *Journal of Pharmacology and Experimental Therapeutics*, doi:10.1124/jpet.107.133074 (2007)
15. Foteinou, P.T., **E. Yang**, G.K. Saharidis, M.G. Ierapetritou and I.P. Androulakis, A systematic framework for the synthesis and analysis of regulatory networks. *Journal of Global Optimization* doi:10.1007/s10898-007-9266-6 (2007)

16. **Yang, E.**, P.T. Foteinou, K.R. King, M.L. Yarmush and I.P. Androulakis, A Novel Non-overlapping Bi-clustering Algorithm for Network Generation using Living Cell Array data. *Oxford Bioinformatics*,23(17):2306 (2007)
17. **Yang, E.** and I.P. Androulakis, "Assessing the Information Content of Microarray Time Series." *Encyclopedia of Healthcare Information Systems* IGI Global (2008)
18. Androulakis, I.P. and **E. Yang**, "Selection of maximally informative genes", (Accepted) *Encyclopedia of Optimization*, 2nd Edition (C.A. Floudas and P. Pardalos, Editors), Springer Editions (2007)
19. **Yang, E.**, T. Maguire, M.L. Yarmush and I.P. Androulakis, Informative Gene Selection and Design of Regulatory Networks Using Integer Optimization. *Comp. Chem. Eng.*, doi:10.1016/j.compchemeng.2007.01.009 (2007)
20. Androulakis, I.P., **E. Yang**, R.R. Almon, D.C. Dubois and W.J. Jusko, Analysis of Time-Series Gene Expression Data: Methods, Challenges and Opportunities. *Annual Review Biomedical Engineering*, 9:205 (2007)
21. **Yang, E.**, D. Simcha, R.R. Almon, D.C. Dubois, W.J. Jusko and I.P. Androulakis, Context Specific Transcription Factor Prediction. *Annals of Biomedical Engineering*, 35(6):1053 (2007)
22. **Yang, E.**, T. Maguire, M.L. Yarmush, F. Berthiaume and I.P. Androulakis, Bioinformatics Analysis of the Early Inflammatory Response in a Rat Thermal Injury Model. *BMC Bioinformatics*, 8:10 (2007)
23. **Yang, E.** and I.P. Androulakis, Information Content of Short Time Series Expression Data. *Proceedings of the 28th IEEE EMBS Annual International Conference*, 1:5535 (2006)
24. **Yang, E.**, F. Berthiaume, M. Yarmush and I.P. Androulakis, An Integrative Systems Biology Approach for Analyzing Liver Hypermetabolism. Proceedings of the Joint 9th Int. Symp. Process Systems Engineering and 16th European Symp. Computer Aided Process Engineering, Garmisch-Partenkirchen, Germany (2006)