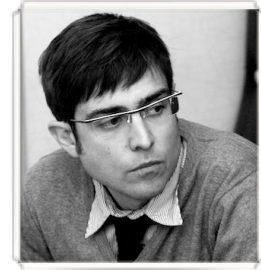


# Francisco Llaneras

Researcher  
Systems Engineering & Computational Biology

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## EDUCATION

- 2011                    PhD in Control Engineering and Industrial Informatics  
Title: Interval and possibilistic methods for constraint-based metabolic models  
Supervisor: Prof. Jesús Picó  
Universidad Politécnica de Valencia
- 1999-2005            B. Sc. Control Systems and Industrial Electronics Engineering  
Universidad Politécnica de Valencia

## ACADEMIC POSITIONS

- Now                    Researcher at AI2, Universidad Politécnica de Valencia, Spain
- 2006-2010            PhD scholar at DISA, Universidad Politécnica de Valencia, Spain
- 2009                    Visitant at LCSB, Ecole Polytechnique Fédérale de Lausanne, Switzerland  
2 months. Advisor: Prof. Vassily Hatzimanikatis
- 2007                    Visitant at CESAME, Université Catholique de Louvain, Belgium  
3 months. Advisor: Prof. Georges Bastin
- 2006                    Research assistant at DISA, Universidad Politécnica de Valencia, Spain
- 2005                    Final Project scholar at Biopolis S.L.

## PRIZES AND FELLOWSHIPS

- Fellowships**        PhD fellowship «Formación Profesorado Universitario»,  
Spanish Ministry of Science and Technology (2006-2010)
- Graduate fellowship, Universidad Politécnica de Valencia (2006)
- Final Project fellowship, Universidad Politécnica de Valencia (2005)
- Prize**                    Honorable mention in the «Premios Nacionales de Fin de Carrera»  
Award to most outstanding graduates. Spanish Ministry of Education (2005)
- Prize**                    Valedictorian award or «Premio Extraordinario final de carrera»  
Award to top graduate of the class. IX promotion of Control Systems and Industrial  
Electronics Engineering, Universidad Politécnica de Valencia (2005)

## RESEARCH INTERESTS

Systems biology | constraint-based models | metabolic flux analysis | uncertainty | bioprocess control

## PUBLICATIONS — Papers

1. Llaneras F, Picó J (2007). An interval approach for dealing with flux distributions and elementary modes activity patterns. *Journal of Theoretical Biology*, 246(2).
2. Llaneras F, Picó J (2007). A procedure for the estimation over time of metabolic fluxes in scenarios where measurements are uncertain and/or insufficient. *BMC Bioinformatics*, 8:42.
3. Llaneras F, Picó J (2008). Stoichiometric modelling of the cell metabolism. *Journal of Bioscience and Bioengineering*, 1:1-12.
4. Llaneras F, Sala A, Picó J (2009). A possibilistic framework for metabolic flux analysis. *BMC Systems Biology*, 3:73.
5. Llaneras F, Picó J (2010). Which metabolic pathways generate and characterise the flux space? A comparison among... *7. Biomedicine and biotechnology*, vol. 2010.
6. Llaneras F, Tortajada M, Picó J (2010). Validation of a constraint-based model of *Pichia pastoris* growth under data scarcity. *BMC Systems Biology*, 4:115.

<b>Citations</b>	[3]	44 cites (Google Scholar, 2011)
	[1]	23 cites (Google Scholar, 2011)
	[2]	12 cites (Google Scholar, 2011)
	[5]	6 cites (Google Scholar, 2011)

<b>Spread</b>	[4]	Highly accessed article in <i>BMC Systems Biology</i>
	[3]	Highly accessed article in <i>Journal Bioscience and Bioengineering</i> (Jan-June 2008)

<b>Reviewer</b>	Reviewer for 4 JCR journals: <i>BMC Bioinformatics</i> , <i>Biotechnology and Bioengineering</i> , <i>Biotechnology Progress</i> and <i>Process Biochemistry</i>	
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## PUBLICATIONS — Conferences (oral, papers & posters)

7. [Article] Llaneras F, Picó J, Navarro JL, Picó-Marco E (2005). Entorno gráfico de simulación, monitorización y control de biorreactores, *XXVI Jornadas De Automática*.
8. [Article] García-Nieto S, Llosá A, Llaneras F, Sanchís J (2005). Plataforma de simulación y control distribuido bajo tiempo real, *XXVI Jornadas De Automática*.
9. [Article] Llaneras F, Picó J (2006). The linkage between flux distributions and elementary modes activity patterns: An interval Approach. *1st International Symposium on Systems Biology*.
10. [Poster] Llaneras F, Bastin G, Picó J (2007). On metabolic flux analysis when measurements are insufficient and/or uncertain. *IAP Dysco workshop*.
11. [Poster] Llaneras F, Tortajada M, Picó J (2007). Structural analysis of metabolic pathways applied to heterologous protein production in *P. pastoris*. *European Congress on Biotechnology*, *Journal of Biotechnology*, 131(2):S209.
12. [Talk] Llaneras F, Picó J (2007). Estimation of metabolic fluxes in scenarios where measurements are uncertain and/or insufficient. *Meeting of the Spanish Systems Biology Network*.
13. [Poster] Tortajada M, Llaneras F, Picó J (2008). Constraint-based modelling applied to heterologous protein production with *P. pastoris*. *Meeting of the Spanish Systems Biology Network*.
14. [Talk] Llaneras F, Sala A, Picó J (2008). A possibilistic framework for metabolic flux analysis. *Meeting of the Spanish Systems Biology Network*.
15. [Article] Llaneras F, Sala A, Picó J (2009). Applications of possibilistic reasoning to intelligent system monitoring: a case study. *IEEE Multi-conference on Systems and Control*.

16. [Talk] Llaneras F, Picó J (2010). Redes metabólicas y su estudio. *XXIII Congreso de la sociedad española de bioquímica y biología molecular*.
17. [Poster] Llaneras F, Sala A, Picó J (2010). Dynamic flux balance analysis: a possibilistic approach. *Systems Biology of Microorganisms*.
18. [Talk] Llaneras F, Sala A, Picó J (2010). Possibilistic estimation of metabolic fluxes during a batch process accounting for dynamics. *IFAC International Conference Computer applications in biotechnology*.
19. [Talk] Tortajada M, Llaneras F, Picó J (2010). Possibilistic validation of a constraint-based model for *P. pastoris* under data scarcity. *IFAC International Conference Computer Applications in Biotechnology*.
20. [Poster] Gonzalez-Martinez JM, Ferrer A, Llaneras F, Tortajada, Picó J (2010). Metabolic flux understanding of *Pichia pastoris* grown on heterogeneous culture media. 12th International Conference on Chemometrics in Analytical Chemistry, *CAC-2010*.

## RESEARCH PROJECTS — *And contracts*

- Multi-scale modeling in systems biology. Application to monitoring, optimization and control of bioprocesses. *Ministerio de Ciencia y Tecnología*, (FEDER-CICYT DPI2008-06880-C03-01)
- Diseño e Implementación de estrategias avanzadas de sensorización y control para la producción industrial de procesos biotecnológicos, *Ministerio de Ciencia y Tecnología*, (BIOLEV, DPI2002-00525)
- Control de Glucemia en Lazo Cerrado en Pacientes con Diabetes Mellitus 1 y Pacientes Críticos, *Ministerio de Ciencia y Tecnología*.
- Monitorización y control automático de producción de proteínas heterólogas de levaduras, *Universidad Politécnica de Valencia y Biopolis S.L.*
- Instalación y Puesta a Punto de Biorreactores, *Universidad Politécnica de Valencia y Biopolis S.L.*

## TEACHING

2009-2010	Automática Básica. Ingeniero industrial (20 hours) Control Automático. Ingeniero aeronáutico (23 hours) Control Inteligente. Ingeniero en automática (9 hours) Regulación Automática. Ingeniero eléctrico (12 hours)
2008-2009	Control Automático. Ingeniero aeronáutico (23 hours) Comportamiento dinámico de sistemas. Ingeniero industrial (20 hours) Sistemas Automáticos. Ingeniero en organización Industrial (16 hours)

**Accreditation** Accredited as «Ayudante Doctor» by ANECA (2011)  
Accredited as «Professorat Lector» by AQU (2011)

## SCIENCE DISSEMINATION

**Blogging** Author of «En Silicio» (<http://www.ensilicio.com>)  
I write about economy, science and news using charts and quantitative data.  
More than 1800 subscribers and 10.000 visitors per month.

**Blogging** Coauthor of «Politikon.es» (<http://politikon.es>)  
I write about politics, society and economy.  
Around 20.000 visitors per month.

**Other** Written pieces for other media (Euribor, ActiBBVA, Idealista, BásicoHomes, etc.)