

## Chao Lin

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| CONTACT INFORMATION  | TéSA Laboratory<br>14-16, Port Saint-Etienne<br>31000 Toulouse<br>France  | <i>Mobile:</i> +33 7 61 17 95 55<br><i>Fax:</i> +33 5 61 24 73 73<br><i>E-mail:</i> <a href="mailto:chao.lin@tesa.prd.fr">chao.lin@tesa.prd.fr</a><br><a href="http://lin.perso.enseeiht.fr/">http://lin.perso.enseeiht.fr/</a> |
| PROFESSIONAL PROFILE | A competent, creative and highly motivated Ph.D. research engineer in signal processing with 3 years' experience in biomedical engineering. Possesses specific expertise in statistical signal processing, especially in physiological signal processing and clinical data analysis. Proven ability in multi-cultural team-working environment. Highly intuitive and excellent communication skills.  |   |
| OBJECTIVE            | Placement in a research position (i.e., postdoctoral, research scientist in industry or faculty) that allows for advanced research in biomedical signal processing (i.e., modeling, estimation, detection and classification) with a particular focus on the physiological signal processing (e.g., electrocardiogram, electroencephalogram, electromyography...) and the analysis of clinical data.  |   |
| RESEARCH INTERESTS   | statistical signal processing, biomedical signal processing, sparse signal processing, Bayesian inference, hierarchical models, Markov chain Monte Carlo methods, sequential Monte Carlo methods, array processing, computer graphic  |   |
| EDUCATION            | <b>National Polytechnic Institute of Toulouse</b> , Toulouse, France<br>Ph.D., TéSA Laboratory/CNRS-IRIT, October 2009 to present<br>– Thesis Topic: <i>P and T-wave analysis in ECG signals using Bayesian methods</i><br>– Funding: Research fellowships provided by TéSA and St. Jude Medical, Inc.<br>– Adviser: Prof. Corinne Mailhes and Prof. Jean-Yves Tournet<br><br><b>Ecole Nationale Supérieure d'Electrotechnique, d'Electronique, d'Informatique, d'Hydraulique et des Télécommunications (ENSEEIHT)</b> , Toulouse, France<br>M.Eng / Diplôme d'ingénieur, Electronics Engineering, Sep. 2007 to July 2009<br>– Thesis Topic: <i>Optimized Spatial Resampling for Microphone Array Beamforming</i><br>– Scholarship provided by Rockwell Collins Co. Ltd.<br><br><b>Beihang University</b> , Beijing, China<br>B.S., Electronics Engineering and Telecommunication, Sep. 2002 to July 2006 |   |
| RESEARCH EXPERIENCE  | <b>Doctoral Research Engineer</b> , TéSA, Toulouse, France Oct. 2009 to present<br>– Studying innovative Bayesian methods for physiological signal analysis.<br>– Designing, validating and implementing ECG signal processing algorithms.<br>– Collaborating with scientists from St. Jude Medical and cardiologist from Toulouse Rangueil Hospital.<br>– Sharing research results with project co-workers from different countries (Austria, USA) and presenting at international scientific conferences (ICASSP, EMBC...).<br>– Writing original papers for publication in scientific journals.<br><br><b>Intern Researcher</b> , ST-Ericsson Ltd., Paris, France Feb. 2009 to Oct. 2009<br>– Designing multi-channel audio processing algorithms for mobile platforms.<br>– Validating and optimizing algorithms.<br>– Implementing designed algorithms on DSP devices.                               |   |

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|                               | <p><b>Intern Engineer</b> SAFRAN-Technofan Ltd., Toulouse, France June 2008 to Sep. 2008</p> <ul style="list-style-type: none"> <li>– Developing embedded software for the electronic boards of Airbus A380 fan system.</li> <li>– Writing software documents and project reports.</li> </ul>   |
| TEACHING EXPERIENCE           | <p><b>Teaching Assistant</b>, National Polytechnic Institute of Toulouse Sep. 2010 to present</p> <ul style="list-style-type: none"> <li>– Practical sessions of signal processing (24h) for 2<sup>nd</sup> year Master student (in English)</li> <li>– Tutorials of signal representation and analysis (16h), numeric signal processing (12h) and adaptive filtering (10h) for 1<sup>st</sup> year Master student (in French)</li> <li>– Signal processing project (36h) for 2<sup>nd</sup> year Master student (in French)</li> </ul>   |
| JOURNAL PUBLICATION           | <p>Chao Lin, C. Mailhes and J.-Y. Tourneret. P and T wave delineation in ECG signals using a Bayesian approach and a partially collapsed Gibbs sampler, <i>IEEE Transactions on Biomedical Engineering</i>, 57(12):2840–2849, Dec. 2010.<br/>doi:10.1109/TBME.2010.2076809</p>  |
| SUBMITTED JOURNAL PUBLICATION | <p>Chao Lin, G. Kail, C. Mailhes, J.-Y. Tourneret and F. Hlawatsch. Beat-to-beat P and T wave delineation and waveform estimation in ECG Signals using a block Gibbs sampler, <i>IEEE Transactions on Biomedical Engineering</i>, 2011. Submitted.</p>  |
| CONFERENCE PUBLICATIONS       | <p>Chao Lin, G. Kail, J.-Y. Tourneret, C. Mailhes and F. Hlawatsch. P and T wave Delineation and Waveform Estimation in ECG Signals Using a Block Gibbs Sampler. In: <i>IEEE Int. Conf. on Acoust., Speech and Sig. Proc. (ICASSP)</i>, Prague, Czech Republic, May 2011, pp. 537-540.</p> <p>Chao Lin, C. Mailhes and J.-Y. Tourneret. T-wave Alternans Detection Using a Bayesian Approach and a Gibbs Sampler. In: <i>Annu. Int. Conf. IEEE Eng. Medicine Biol. Soc. (EMBC)</i>, Boston, MA, Aug. 2011, pp. 5868-5871.</p> <p>Chao Lin, M. Bugallo, C. Mailhes and J.-Y. Tourneret. ECG denoising using a dynamical model and a marginalized particle filter. In: <i>IEEE Asilomar Conf. Signals, Systems and Computers</i>, Pacific Grove, CA, Nov. 2011, to appear.</p> <p>Chao Lin, A. Grand, S. Tassart, J.-Y. Tourneret, O. Besson and L. Saïd. Optimized Spatial Resampling for Microphone Array Beamforming. In: <i>IEEE Int. Conf. on Sig. Proc., Comm. and Computing</i>, Xi'an, China, Sep. 2011, pp. 1-4.</p> |
| EXPERTISE AND SOFTWARE SKILLS | <p>Statistical signal Processing and biomedical signal processing:</p> <ul style="list-style-type: none"> <li>• Probability, Random Variables, Stochastic Processes, Bayesian detection and estimation, Information Theory, Sparse signal processing, Markov chain Monte Carlo methods, Physiological signal processing, clinical data analysis</li> </ul> <p>Computer Programming:</p> <ul style="list-style-type: none"> <li>• C, C++, Python, Java, GNU make, MATLAB, LabView, Mathematica</li> </ul> <p>Embedded and Real-time Systems:</p> <ul style="list-style-type: none"> <li>• Software development with several DSP platforms (e.g., Analog Devices DSP's)</li> </ul> <p>Productivity Applications:</p> <ul style="list-style-type: none"> <li>• <math>\text{\TeX}</math> (<math>\text{\LaTeX}</math>, <math>\text{\BibTeX}</math>, <math>\text{\PSTricks}</math>), most common productivity packages (for Windows and Linux platforms)</li> </ul>   |
| LANGUAGE                      | <ul style="list-style-type: none"> <li>• <b>English</b>      <i>fluent</i>      <b>TOEIC:</b> 990/990    <b>TOEFL:</b> 623/660</li> <li>• <b>French</b>      <i>fluent</i>      <b>TFI:</b> 890/990    five years' study in France</li> <li>• <b>Chinese</b>      <i>mother tongue</i></li> </ul>   |