

# G. PABLO VANWOERKOM

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## SUMMARY

Skilled and enthusiastic programmer knowledgeable in a broad range of programming languages. Special interest in audio applications, music, open source software, and computer games.

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## EDUCATION

<b>Indiana University, Bloomington, IN</b> <i>Master of Science, HCI-Music Informatics</i> Capstone Project: Developed a probabilistic voice-substitution karaoke program.	Dec 2008 GPA: 3.746
<b>Carroll College, Helena, MT</b> <i>Bachelor of Arts</i> <i>Majors: Computer Science, Mathematics</i> <i>Minor: Music</i>	Dec 2005 GPA: 3.840

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## EMPLOYMENT & INTERNSHIPS

<b>Web programmer</b> <i>WFIU Public Radio(wfiu.org), Indiana University</i> <ul style="list-style-type: none"><li>Developed dynamic Wordpress plugins to improve ease of use for content producers and present content in interesting ways.</li><li>Created scripts to collect and organize content from various sources(web pages, xml, databases, etc.) into the Wordpress CMS.</li></ul>	Aug. 2007 – Present
<b>Research programmer</b> <i>Speech Research Laboratory, Indiana University</i> <ul style="list-style-type: none"><li>Developed an amplitude leveling program used to prepare auditory experiments.</li><li>Developed a probabilistic generator and analyzer of word-sequences. Used for research in the grammar acquisition abilities of humans.</li><li>Modified the open source bibliographic application, cb2bib, to import years of references into EndNote, improving the management of references in speech related research.</li></ul>	June 2007 - Sept. 2008
<b>Calculus tutor</b> <i>Math Department, Indiana University</i> <ul style="list-style-type: none"><li>Clarified questions and encouraged students, as well as validated and repaired questions for an online homework system.</li></ul>	Sept. 2006 – April 2007
<b>Research Intern</b> <i>National Institute of Standards and Technology, Boulder, Colorado</i> <ul style="list-style-type: none"><li>Worked with the statistical engineering division to implement a new measurement uncertainty propagation method within Excel, but using R (an statistics environment and programming language).</li></ul>	May 2005 – Aug. 2005
<b>Middle School English Teacher</b> <i>Experimental Middle School, Haining, Zhejiang, China</i> <ul style="list-style-type: none"><li>Prepared own curriculum and taught English to middle school children.</li></ul>	June 2004 – August 2004

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## RELATED COURSES & PROGRAMMING SKILLS

**Advanced Computer Graphics**  
Using C++ and OpenGL, explored the geometric principles behind graphics, as well as some user interaction practices.

**Scientific Computing**  
Looked at computer hardware, software, and numerical methods useful for scientific workstations and supercomputers, specializing on efficient matrix computations.

**Music Information Process: Audio and Symbolic**  
Using R mainly, an statistical environment and programming language, implemented

probabilistic algorithms such as HMMs.

**Biomorphic Computation**

Implemented intelligent behavior based on biological systems using computational mechanisms such as genetic algorithms, artificial neural networks, and self-organizing maps.

**Information Visualization**

As the programmer in a group, created a visualization application to explore and compare thousands of artificial neural weights obtained from agents in Larry Yeager's Polyworld.

**MIDI and Computer Music**

Worked with Digital Performer and Reason to create original electronic music compositions.

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**Programming languages:** C++, Java, Python, PHP, Javascript, XSLT.

**Other technologies :** Linux OS(Debian), OpenGL, Matlab, R (statistics environment and programming language), Tcl/Tk, MySQL.

**Music related technologies:** Pure Data (graphical DSP programming environment), Digital Performer, Reason, FL Studio, Audacity, Adobe Audition.

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VOLUNTEER

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**Bloomington Argentine Tango Organization (BATO)** Jan. 2007 - Present  
**Webmaster**

- Efficiently correspond with BATO members on site updates and administer the e-mail listserv. Developed a dynamic map's page, a music widget for students, and automated website updates for practice schedule. ([www.bloomingtango.net](http://www.bloomingtango.net)).
- In addition to administering the website, help coordinate performances and milongas (tango dances), and assist and coach beginner tango dancers.

**International Vocal Ensemble Informant** Spring Semester 2008  
**(at Indiana University's Jacobs School of Music)**

- Modeled and coached on music from Oaxaca, Mexico to ensemble members and guitar player. Accompanied ensemble at the end of the semester concert (on guitar).

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AWARDS

- Hispanic College Fund Google Scholar (2006, 2007).

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OTHER SKILLS

- Fluent in Spanish, conversational Chinese.
- Self-taught piano, guitar, and erhu player.