

Chapter 6

Using the IEEEtran L^AT_EX Class

- + Use IEEEtran class file by Michael Shell [1]: conference, journal, technical note
- + “Bare bones” files provided bare_conf.tex, bare_jrnl.tex, bare_jrnl_compsoc.tex
- + Begin a journal article:

```
\documentclass[10pt,final,journal,letterpaper,oneside,twocolumn]{IEEEtran}
```

- + Paper title:

```
\title{Efficient Algorithms\for Calculating the Number  $\pi$ }
```

- + Author, membership type, publishing dates and affiliation:

```
\author{John~Smith,%  
  \IEEEmembership{Member, IEEE}%  
  \thanks{Manuscript received...}%  
  \thanks{J.~Smith is with...}%  
}
```

- + Running headings:

```
\markboth{Journal of Computational Mathematics, Vol.~1, No.~5, May~28, 2012}%  
  {Smith: Efficient Algorithms for Calculating the Number  $\pi$ }
```

- + Publication ID:

```
\IEEEpubid{0000--0000/00\00.00~\copyright~2012 IEEE}
```

- + Special paper notices:

```
\IEEEspecialpapernotice{ (Invited Paper) }
```

- + Title creation:

```
\maketitle
```

- + Abstract inclusion:

```
\begin{abstract}  
  \boldmath Efficient computation of the number  $\pi$  always has been  
  a holy grail of the computational mathematics.  
\end{abstract}
```

- + Key words:¹

```
\begin{IEEEkeywords}  
  Efficient algorithms, elegant algorithms, number crunching  
\end{IEEEkeywords}
```

¹For an up-to-date list of the IEEE-approved keywords send a blank email to keywords@ieee.org

+ Section headings:

```
\section{...}
\subsection{...}
\subsubsection{...}
\paragraph{...}
```

+ Drop cap letter:

```
\IEEEPARstart{N}{umbers} have a great importance in peoples' lives...
```

+ Citations:

```
First attempts of the efficient  $\pi$  calculation
date back to 1593~\cite{Viete93}.
```

+ Equations (equation):

```
\begin{equation}
\pi = \frac{4}{k} \Big( m \cot^{-1} u + n \cot^{-1} v \Big)
\label{E:Machin}
\end{equation}
```

$$\pi = \frac{4}{k} \left(m \cot^{-1} u + n \cot^{-1} v \right) \quad (6.1)$$

+ Multiline equations and advanced mathematical notation:

+ Load the AMS package:

```
\usepackage[cmex10]{amsmath} % use true type 1 fonts
% \interdisplaypenalty % automatic insertion of line breaks
```

+ Use environments such as multiline and align

+ Floating structures (IEEE requirement): top of the page [t], no floats on the first page

+ Double column floats: figure* and table* environments

+ Appendices:

+ Single appendix:

```
\appendix[Pseudo-Random Numbers]
```

+ Multiple appendices:

```
\appendices
\section{Pseudo-Random Numbers}
\section{Prime Numbers}
```

+ Acknowledgements:

```
\section*{Acknowledgements}
```

+ Bibliographies:

```
\bibliographystyle{IEEEtran}
\bibliography{IEEEabrv,references}
```

+ Biographies:

```
\begin{IEEEbiography}[ { \includegraphics{pic/smith} } ]{John Smith} ...
...
\end{IEEEbiography}
```

- † Photo of size 1×1.25 in, 220 dpi, grey-scale, 8 bits per sample
- † Use the environment `IEEEbiographynophoto` for pictureless biographies
- † Package `IEEEtrantools` enables `IEEEtran` commands and environments for other document classes



Bibliography

- [1] M. Shell, *How to Use the IEEEtran L^AT_EX Class*, IEEE, Jan. 11, 2007, ver. 1.7. [Online]. Available: <http://www.michaelshell.org/tex/ieeetran/>