1 Introduction
Image restoration is to find the best possible estimate of the original unknown image from the degraded image. 
\[ y(i, j) = x(i, j) \ast h(i, j) + n(i, j) \]

Non blind deconvolution

Blind deconvolution

Applications
Scientific
Astronomy
Remote sensing
Medical imaging
Microscopy
Motion tracking

2 Contributions
2.1 Efficient Blind Separable Kernel Deconvolution
Deconvolution in communication \( \rightarrow \) Deblurring in image processing

\[ J(z) = \frac{1}{4}(z^{-2} - \gamma) \]

Dispersio constant 
\[ \gamma = \sigma^2_k \]

Kurtosis 
\[ k_x = \frac{E\{|x|^4\}}{E\{|x|^2\}^2} \]

2.2 Minimum Kurtosis CMA Deconvolution for Blind Image Restoration

2.3 Work in progress
Fast non blind image restoration

<table>
<thead>
<tr>
<th>Technique</th>
<th>Performance in seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin sparse deconvolution (50 iterations)</td>
<td>556.185127</td>
</tr>
<tr>
<td>Levin sparse deconvolution (10 iterations)</td>
<td>124.532852</td>
</tr>
<tr>
<td>Shan executable</td>
<td>39.563000</td>
</tr>
<tr>
<td>New algorithm</td>
<td>1.608270</td>
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</tbody>
</table>

Image results on deconvolution performance

Have you got a blurred photo? We do the restoration
Pradeepa D Samarasinghe \( ^\dagger \) (pradeepa.samarasinghe@anu.edu.au)
Rodney A Kennedy \( ^\dagger \) (rodney.kennedy@anu.edu.au)