

**Xanadu**, by Samuel Taylor Coleridge (1816)

In Xanadu did Kubla Khan  
A stately pleasure-dome decree :  
Where Alph, the sacred river, ran  
Through caverns measureless to man  
Down to a sunless sea.  
So twice five miles of fertile ground  
With walls and towers were girdled round :  
And there were gardens bright with sinuous rills,  
Where blossomed many an incense-bearing tree ;  
And there were forests ancient as the hills,  
Enfolding sunny spots of greenery.  
But oh ! that deep romantic chasm which slanted  
Down the green hill athwart a cedarn cover !  
A savage place ! as holy and enchanted  
As e'er beneath a waning moon was haunted  
By woman wailing for her demon-lover !  
And from this chasm, with ceaseless turmoil seething,  
As if this earth in fast thick pants were breathing,  
A mighty fountain momently was forced :  
Amid whose swift half-intermitted burst  
Huge fragments vaulted like rebounding hail,  
Or chaffy grain beneath the thresher's flail :  
And 'mid these dancing rocks at once and ever  
It flung up momently the sacred river.  
Five miles meandering with a mazy motion  
Through wood and dale the sacred river ran,  
Then reached the caverns measureless to man,  
And sank in tumult to a lifeless ocean :  
And 'mid this tumult Kubla heard from far  
Ancestral voices prophesying war !  
The shadow of the dome of pleasure  
Floated midway on the waves ;  
Where was heard the mingled measure  
From the fountain and the caves.  
It was a miracle of rare device,  
A sunny pleasure-dome with caves of ice !  
A damsel with a dulcimer  
In a vision once I saw :  
It was an Abyssinian maid,  
And on her dulcimer she played,  
Singing of Mount Abora.  
Could I revive within me  
Her symphony and song,  
To such a deep delight 'twould win me,  
That with music loud and long,  
I would build that dome in air,  
That sunny dome ! those caves of ice !  
And all who heard should see them there,  
And all should cry, Beware ! Beware !  
His flashing eyes, his floating hair !  
Weave a circle round him thrice,  
And close your eyes with holy dread,  
For he on honey-dew hath fed,  
And drunk the milk of Paradise.

**Berkeley Zoo**, ©Tim Davis, Oct 2015.  
<https://youtu.be/BELQDFRiEpI>

In Berkeley Zoo did Demmel, Jim  
A scaling LAPACK decree :  
Where Inf, the underflow, and NaN  
Threw errors measureless to man  
In Fortran, less in C.  
With twice five eps of rounding down  
Strong scaling walls were girdled round :  
And there were gardens bright with polynomials,  
Where blossomed many a source code tree  
All writ in Fortran ancient as the hills,  
Enfolding speedy BLAS assembly.  
But oh ! that communication chasm which slanted  
Down the plots of performance limits !  
A savage place ! as holy and enchanted  
As e'er beneath a waning core was powered  
By woman wailing for her silent-coder !  
And from this chasm, with furious message seething,  
As if the cores in fast thick flops were breathing,  
A mighty matrix momently was forced :  
Amid whose swift ill-conditioned burst  
Huge messages sent like rebounding hail,  
Or chaffy bits beneath a thrashing page :  
Yet cutting these comms at once and ever,  
Jim flung up momently the flowing code.  
For years developing with a mazy motion  
Through papers thick the sacred package ran  
Then reached the archives measureless to man,  
And sync'ed in git to a tar gz :  
And 'mid this tumult Demmel heard from far  
Spectral problems clammering for QR !  
The shadow of the code so treasured  
Floating rounded 'way from zero ;  
Where was lowered the ratio measured  
Of the words to all the flops.  
It was a miracle of rare device,  
A scaled LAPACK, and so concise !  
A damsel with a dulcimer  
In a vision once I saw :  
It was an algorithmic maid,  
And on her dulcimer she played,  
Singing in eigenvalues.  
Could I retrieve her eigenvectors  
and so remake her song,  
To such a deep delight 'twould win me,  
That with Fortan code so strong,  
I would build that package there,  
That ScaLAPACK ! Those codes so fast !  
And all who heard should see Jim there,  
And all should cry, Beware ! Beware !  
His flashing eyes, no floating err !  
Prove a big-O bounded thrice  
And listen well with holy dread,  
For he, with silent words, 'tis said,  
Hath sped the math of Paradise.